GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

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STRAY STRAWS FROM DR. C. C. MILLER.

POSSIBLY we may find that sweet clover of the white sort is best in one place and the yellow in another.

ALFALFA, A. C. Tyrrel reluctantly admits in *Nebraska Bee keeper*, is of no value as a honey-plant at Madison, Neb.

BAKED BEANS usually have a little sugar or molasses put in them. Try honey instead, and see if it isn't an improvement.

CAUCASIAN QUEENS have been imported into England by H. W. Brice. They are very gentle, and the Russians say they are productive.

HONEY-GEMS. Flour, 196 lbs.; lard, 10 lbs.; honey, 7 galls.; molasses, 7 galls.; brown sugar, 15 lbs.; carbonate of soda, 3½ lbs.; salt, 1 lb.; water, 4 galls.; vanilla extract, 1 pt.

GREAT BRITAIN has tried postal savings banks for 25 years, and now has on deposit $337,000.000. Canada, after 5 years, has $26,000,000 at 3½ per cent interest. Isn't this country a little behind the times?

THE LIVES of some people will be lengthened by keeping bees in the cellar. Do you know why? They'll allow the cellar to be so foul that it isn't healthy to live over it; but if bees are cellared they'll clean up and whitewash the cellar.

PEAT, finely broken up, is recommended in *Revue Nationale* as an improvement on chaff for cushions on hives. It is a good absorbent of moisture, a disinfectant, and a poor conductor of heat. It is liked in Germany. [The material is probably good, but hardly available for this country.—ED.]

AN ARTICLE in a leading Chicago daily gravely explains the difference between bees in hives and those in trees, or "wild" bees. The wild bee is smaller, stronger, and fiercer than "his tamer brother;" each bee thrusts in his sting again and again without leaving it in the flesh, and the wild bee gathers from basswood a honey whose richness no home honey can approach!

THE ROYAL SHOW of 1897, which will be held at Manchester in June next, is now receiving attention in the *British Bee Journal*. Oughtn't we to begin to talk about the convention at Buffalo?

LEVELING a hive by the eye may do fairly well where the ground is level; but on a slope the eye can't be trusted. The side of the hive toward the slope will always look higher than it is. It pays well to use a spirit-level.

THE FRATERNITY in general will regret to learn that one of the veterans, H. D. Cutting, has partially lost his sight, and there is fear it may be entirely lost. [Mr. Cutting was formerly the very efficient secretary of the Michigan State Bee-keepers' Association. He had the reputation of being a very fine mechanic, and the loss of sight will be a sad blow. I sincerely hope the worst fears will not be realized.—ED.]

AN ADDED HAPPINESS will come to us who live in the country if free rural delivery of mail should come into general use. There seems a little prospect of it from the fact that the Post-office Department is now trying it on a little larger scale than in the time of Harrison. Wanamaker, a man with a clear business head, urged it. The present experiment gives daily collection and distribution of mail at farmhouses in a number of selected counties in different States.

"WILL UNFINISHED SECTIONS of full depth, when filled with honey the second time, and capped over, make first-class comb honey?" To this question in *American Bee Journal*, 4 say yes, 11 no, and 5 say, "Yes, if the comb is cut down." If the 4 have actually succeeded themselves, their testimony outweighs that of the 11 noes, just as the testimony of 4 witnesses who saw a man commit murder outweighed that of 11 who hadn't seen it. But some sections won't do without cutting down. [That is just it exactly. One or two who know all about what they are talking about ought to have a good deal more weight than ten or twelve times

that number who do not know from experience. But I am rather of the opinion that the "four" referred to work on the plan of the "five" who level down the combs. From all the reports I have ever read, full-depth combs not leveled down do not make real first-class comb honey. —ED.]

THE HOMESTEAD, an excellent agricultural paper published at Des Moines, Iowa, says, in speaking of melilotus alba: "We know of no botanist who speaks of the plant for use in the Northwest who does not rank it as a weed." Possibly. So is a stalk of wheat a weed in a flower-garden. But when a man deliberately devotes a portion of ground to be occupied exclusively by wheat, the wheat of that field can hardly be called weeds. And when sweet clover is treated in the same way, as it is increasingly for its value as a forage plant, then it ceases to be a weed.

"THERE IS BUT very little doubt that the function of the upper-head and thoracic glands is to furnish the ferment which will digest the nectar of the flowers, while the lower head glands secrete a digestive liquid which acts to digest the pollen. The fact that these lower-head glands are better developed in the young workers, and that the other glands attain their maximum development in the older bees, accords with what has been said above"—that young bees are better as nurses and old ones as field hands.—*Prof. Cook in American Bee Journal.*

PROF. COOK (*American Bee Journal*) thinks it almost certain that fruit-growers of Southern California will become bee-keepers so as to have fruit-blossoms fertilized, and thinks they should introduce the gentle Carniolans. If wanted only as fertilizers, then gentleness alone might rule; but you'll see, Professor, that every man of them will want the bee that gets the most honey. [But why Carniolans? We have had one or two colonies of this race that have been as gentle as the ordinary Italians, but no more so. The average of them have been rather more nervous. All my experience would lead me to believe that pure leather-colored Italians would *average* better than Carniolans.—ED.]

FORMERLY I had many a section with the lower edge of the comb built to the separator. When honey was coming in slowly, the bees would fill the side of the section nearest the center of the super faster than the other, and this made the section swing out of plumb, the lower edge coming so close to the separator that the bees fastened it there. Latterly I don't have this trouble, and I think it's because I use bottom starters. The top starter is fastened to the bottom one before the bees put in much honey. [This seems to be a little at variance with the article by G. M. Doolittle in our last issue, page 861. Now, who is right? It would be fun to see Dr. Miller and Doolittle lock horns. GLEANINGS will furnish the arena.—ED.]

HONEY-JUMBLES. Flour, 196 lbs.; lard, 10 lbs.; honey, 12 galls.; molasses, 3 galls.; carbonate of soda, 4 oz.; salt, 1 lb.; water, 3 galls.; vanilla extract, 1 pt. [If this is the real honey-jumble recipe that we as bee keepers have been trying to get hold of for years from the bakers, it is a real acquisition; but knowing the exact proportion of ingredients is one thing, and knowing how to put them together and produce a nice honey-jumble is another. I wish some of our women folks who are adepts at making nice cakes would try their hand at this, and report their success. Of course, they will necessarily have to reduce the proportionate quantities.—ED.]

TEN TONS OF HONEY is used annually by Woodward & Stone, owners of biscuit and confectionery works at Watertown, Wis., as reported in *British Bee Journal* by E. H. Taylor. He was told that nearly all bakers and confectioners use honey in America, and that the United States could not produce enough honey, but had to import from West Indies! Two recipes used at Watertown are given in other "Straws." [It's queer we have to go clear over to England to get this interesting piece of news regarding the doings of some of our own countrymen. The more of such concerns in the country, the better for bee-keepers; but I somewhat doubt the statement that the United States can not produce enough honey for its own use. This may be true, however: Bakers use off or dark grades of honey, and there may not be enough of this on the market to supply their demands; consequently the imported article is used.—ED.]

AMALGAMATION.

WHY IT SHOULD BE EFFECTED ON LINES LAID DOWN BY THE LINCOLN CONVENTION; THE SENTIMENT OF ARIZONA BEE-KEEPERS.

By J. Webster Johnson.

I desire to say a word in favor of the movement to amalgamate the N. A. B. K. A. and the N. B. K. Union. These two organizations have been useful in their way and place; but necessarily, from the nature of each, no very considerable membership could be expected. The Union has done good work in its special line, but not one bee keeper in fifty has had any personal interest in its work, and especially is this true of the larger producers. The N. A. B. K. A. has been simply an annual convention held at various points. The regular attendants have been very few in number, the major-

ity of the participants being from the immediate neighborhood where the meeting is held. It has, no doubt, been very pleasant to those who were able to attend, but I fail to see where it has been particularly useful to bee-keepers in general. On the other hand, the proposed U. S. B. K. Union, as it will be if this constitution is adopted and amalgamation is effected, will be an organization, it seems to me, in which every producer of honey, and especially of the extracted article, will be directly and greatly interested. I believe that adulteration is the one great obstacle in the way of our industry. It is something we can do but little, individually, to combat. Coöperation is necessary. A well-organized union on the plan set forth in this constitution, in charge of a strong board of directors, and with an energetic, level-headed manager, would be in position to wield a powerful influence for good along the lines set forth in Art. II. of that constitution.

This constitution may not be perfect; but I do not see any special weakness in it. Nothing can be gained by another year's delay, as proposed by Mr. Newman, and certainly much valuable time will be lost by such delay.

I have not had time to consult many of our bee-keepers here on this subject, yet I feel safe in saying that nearly all would join such an organization, and contribute very cheerfully to its maintenance; and I certainly hope that this movement for amalgamation will be successful.

I read with interest Mr. Hatch's article, page 777. Had he been better acquainted with that other association of which he speaks he would have known that many of the obstacles which he brings forward have been overcome by us. If I considered this subject one of general interest I might explain somewhat in detail the workings of our association. I do not consider a national association on lines suggested by our California friends as feasible; but on the lines of the proposed U. S. B. K. U. it will be a grand thing.

Tempe, Ariz.

DRAWN COMBS FOR SECTIONS NOT A NEW IDEA.

THEIR EARLY USE, AND BY WHOM.

By M. M. Baldridge.

My attention is called to an article on "Drawn Combs for Sections," in GLEANINGS, page 779, written by Samuel Simmins. The editor, in his footnotes, says: "I am inclined to give Mr. Simmins credit for first conceiving the great possibilities and advantages of drawn combs in the *production of comb honey*. Now, if any one in this or any other country is prior in this idea, let him hold up his hand." Mr. Simmins says that he called the attention of the public to the importance of "drawn combs for sections" as long ago as 1886, in a small pamphlet that was sent to Messrs. Root and Newman in that year. That may all be true; but unless Mr. Simmins can show that he conceived the importance of such combs several years prior to that date, he is certainly behind the times.

In June, 1884, Mr. E. T. Flanagan, of Belleville, Ill., sent to me a carload of bees from New Orleans, to be managed for him that season on shares. The bees were unloaded in this city, and they remained here and near here until the latter part of August of that year, at which time they were reloaded on a car and taken to East St. Louis by the writer. There were 150 colonies of bees, all in two-story Simplicity hives; and while here they were devoted chiefly to extracted honey. In the mean time the writer prepared for Mr. Flanagan 50 Langstroth hives, with 8 frames only, Heddon style. Each of these hives was provided with two supers holding 28 sections each, and these were taken to East St. Louis at the same time the bees were, and in the same car with the bees. By referring to my diary for 1884 I find that about 40 sets of those sections were supplied by me with "drawn combs" produced by those bees while in this city. My purpose was to have those sections, with empty "drawn combs," filled with honey after reaching my destination near East St. Louis. But on my arrival there I found the season too far advanced to use the sections of "drawn combs" to advantage, and therefore confined the bees to extracted honey. When the season closed, the bees needed all the honey they had stored there for winter use, as Mr. Flanagan will now remember. I came back to this city after the honey season closed near East St. Louis, and the supers filled with "drawn combs in sections" were left in or near the apiary. What became of them I do not know; but my recollection is that they were, later on, taken away and sent "down south" to some other apiary by Mr. Flanagan, or by his order.

Again, in 1886 I had charge of three apiaries in Columbia County, Wis., and again on shares. These bees were the property of one Rufus Morgan when the contract was made by me to manage them on shares; but later on they became the property of the Roy Brothers. During that season our total crop of surplus honey was nearly 20,000 lbs.—about half of which was in sections. One Eugene Otis, who then lived and still lives in Batavia, Ill., was my partner in the management of those bees. During that season Mr. Otis and I paid special attention to "drawn combs for sections," and we secured not less than half of the crop of section honey in such combs. These combs were simply drawn out on foundation *in full-sized sheets*, and then cut to proper size and transferred to the sections. The sheets were of the same size as those used for brood-frames. And this, in my opinion, is the only *practical* way to secure

such combs to advantage, and *properly drawn out* for comb honey. I regard the method described by Mr. Simmins in securing such combs as extremely crude, and by no means equal to the one adopted here — not by me alone, but by others whom I will not attempt to mention now.

Now, I trust that no one will harbor the idea that the writer of this claims to be the originator of "drawn combs for sections," for such is not the case. It is my belief that the party who first conceived the idea, and who, perhaps, has made a more extended and profitable use of it than any other man living, whether in Europe or the United States, is still alive, and resides in this (Kane) county, but who, for reasons best known to himself, did not regard it as good business policy to make the matter public through any of the regular bee-periodicals. For that reason, mainly, the matter has been kept virtually a secret by the few to whom it was disclosed a long time ago.

St. Charles Ill.

[Yes, it seemed to me, as I know it did to Mr. Weed, that Simmins' method of securing the drawn combs was laborious, not to say crude.

But the point that interests me is, that you and the bee-keepers you have named found that there was a real distinct advantage in the use of drawn combs in sections. The day will come, and I believe it will not be far distant, when *all* progressive comb-honey producers can't afford to use any thing else.—Ed.]

THE BIRD THAT PUNCTURES THE GRAPES.

THE ORIOLE THE GUILTY BIRD.

By Thaddeus Smith.

I have a large vineyard, and have over 50 varieties of grapes, and have been in the business for a number of years, and have naturally paid some attention to investigating the enemies and diseases they are liable to. I have at times had as many as 40 colonies of bees within 100 yards of my vineyard, and after several years of thorough investigation I completely exonerated the bees from being the author of any damage to the grapes; and as I have on more than one occasion given my views on this matter in the columns of Gleanings I will not discuss it further here.

There are a number of birds that eat grapes, and some that destroy them without eating them. The robins are the more numerous and more frequent visitors to the vineyard, and in their fall flight south they appear here by the thousands, and are very destructive to the smaller varieties, such as Norton's Virginia, Bacchus, Delaware, etc.; and it is sometimes necessary to keep a man with a gun in the vineyard; but they do not do much damage to the larger grapes, such as Catawba, etc. Yellowhammers and woodpeckers eat some grapes; but I can afford to give them all the grapes they eat for the benefit they do in destroying worms and insects.

But the bird that is most destructive to grapes, and the one that pierces them, to be followed by the bees, is that beautiful little sweet singer, the Baltimore oriole; and I have no doubt the specimen procured by the editor, and sent to Prof. Green, was one of them.

When a boy I knew, and was quite familiar with, the oriole as the "swinging bird," so called from their habit of building their curious pendant nest from some overhanging swinging limb of a tree, woven with scraps of hemp, lint, and strings, and deftly tied to the limb—hanging down like a small bag. I loved him for the brilliant plumage of the male, for his gay and cheerful snatches of song, and the curious nest they made, two or three of which were made every spring in the pendant limbs of the big buckeye-tree in the yard of my "old Kentucky home," safe even from a boy's curiosity to know what kind of eggs she laid, and it was hard for me to look upon it as an enemy.

Only a few orioles breed here; but, like the robin, in their migration they appear here in large numbers in August and September. They arrive just in time for the early grapes, and prefer the tender-skinned varieties such as Delaware and Brighton. They do not eat the grapes, but simply puncture them with a small triangular hole. I have never found grapes, or grape seed in their crop.

Why do they pierce the grape? A bird will alight upon a cluster, and, with a quick motion, thrust its sharp bill into one grape after another until a dozen or more are pierced, as if in pure wantonness. It must be only for the drop of juice they get from each grape. Some of the punctures can scarcely be seen when first done; but they all have the three-cornered cut. They are thus left to rot, dry up, or be visited by the bees; and the number of grapes destroyed, or clusters spoiled for market, amounts to more than the damage done by all other birds.

The matured male bird is familiar to all, and easily recognized by his bright colors of orange, black, and gold; but the females and all young birds—male and female—are of a rather dull olive hue, with black and pale yellow intermingled—not all of a uniform color, and are not so easily recognized, and may be mistaken for other birds, as in the case of Prof. Green. They have a stout long bill, very sharp-pointed. When I first found grapes punctured with three-cornered holes it was quite a mystery as to what did it. It took patient watching and waiting for some years before I was certain of the guilty party; but evidence has accumulated until there is no doubt.

There is another oriole here besides the Baltimore. It is a smaller bird. The male is nearly black, with a few streaks of yellow, and the female a light dingy yellow. They make a nest somewhat pendant, of long blades of

grass. A pair nested this summer under a limb of a Norway spruce near my front door, and it was interesting to watch them bringing great quantities of worms and insects to their young; but I have never caught them on the grapes.

I will add that the bees paid no attention to the punctured grapes this (last) season, because there was a good flow of honey from heartsease and goldenrod at the same time. It is only in scarce times that they will go on bruised fruit.

Pelee Island, Can., Nov. 7.

[It is very possible that the bird that has been making us the trouble in our vicinity was an oriole; but it is not the Baltimore oriole, for I am quite familiar with that species. I used to spend considerable time with a friend who was a taxidermist, in gathering specimens. I remember we once came across an oriole's nest suspended over a stream of water. He coveted it, and so did I. The tree could not be climbed, and how to get the nest was the problem. Little dreaming that I should be able to do it I boastingly said to my friend that *I* would bring it down for him if he would fetch the birds; and, raising my rifle to my face, I aimed at the slender twig that held the nest, some 40 feet above. There was a sharp crack, and down came the nest, the twig having been neatly cut by the ball. I was as much surprised as my friend, although I didn't say so; yet *I* knew that it was only a "luck shot."

The two orioles were then secured, stuffed, and mounted, together with the nest. I shall never forget the markings of both birds and the peculiar shape of the nest secured in the manner stated. For this reason I feel sure that the little guilty culprit that has been puncturing our grapes was not a Baltimore oriole, although it might have been a near relative.—ED.]

BIRDS, BEES, AND GRAPES; A FLOCK OF SPARROWS CAUGHT IN THE ACT.

Mr. Root:—Replying to your article on birds, bees, and grapes, page 827, I wish to state that, during the last summer, I had 28 colonies of bees located right among my grapevines, which were heavily loaded with fine fruit; but I never saw a bee molest the berries. However, they worked some on plums that the birds had first punctured. This was done by the jay birds mostly. It is very seldom that I see a sparrow on my premises. I usually pick them off with a 22 rifle, and the remaining ones seem to take the hint. My father, who lives in the little town of Roselle, a mile and a half from my place, and who grows a number of fine varieties of grapes, called my attention to the fact that the bees were working on his grapes. I told him it was the English sparrow that was doing the initial work, and that the bees would then follow and clean up the punctured grapes. We watched a while, and presently a large flock of sparrows alighted on the grapevines and began their work of destruction. After the sparrows were gone, the bees worked on the spoiled grapes. This convinced us that the birds are the aggressors. The English sparrow came in for his full share. There are few sparrows on the farms, but the towns are full of them.

Roselle, Ia. I. W. HOFFMAN.

We note that, along with other industries that are starting up after election, are several glucose-factories.

Dame Nature is enlivening the hopes of bee-keepers for a flow of honey in 1897 by drenching the land with copious rains. We have already, Nov. 24, had about as much as we had during the entire winter of 1895.

Experiments of Sir John Lubbock prove that ants are the longest lived insects known. A species of ant tenderly cared for lived 15 years, another 13 years. A queen laid fertile eggs when past the age of 9 years. We might wish that bees could live to the above age, but we question whether it would be of any benefit.

Mr. C. A. Hatch, of Wisconsin, is certainly one of us. He intends to try at least one season of bee-keeping in California. He has tried one season in Arizona; and with one season here he will be able to decide where to locate permanently. We hope it will be in California. Any way, we shall use Mr. Hatch well, so that he can find no fault on that score.

For a new and economical process of rendering wax, perhaps some of our bee-keepers may find interest in the following:

Please publish in the Farmers' Department a recipe for making beeswax, how it is made, and what process it takes; also how it is done for market purposes; and if old comb would be salable.
JOHN TEMPLETON.

The wax is already made by the bees. The only thing man can do is to separate it from the honey and impurities. To separate from honey, put comb and all into a sauce-pan, with one tablespoonful of water to each pound of honey. Heat gently, and stir occasionally with a wire until all contents are melted. Do not bring to a boiling-point. Set aside to cool. The cake of wax that will form may be carefully lifted off with a knife. It is usually pure enough without further process.

A saucepan, teaspoon, and a wire is all that is necessary.

Aury Denillo Dimmic Wood. Any one would naturally think that a person bearing the foregoing name would be somewhat dwarfed, sickly, or short-lived; but the subject under consideration seems to thrive in spite of the name, and is a tall handsome man known for short as A. D. D. Wood, of Lansing, Mich. Mr. Wood spent one year in California, and then returned to Michigan. When he came out here he was much enthused at the idea of rearing queens on the beautiful Catalina Island, 25 miles off our coast. He secured the right to put down a queen-rearing apiary near Avalon. The scheme contemplated a large apiary upon the mainland, and a fertilizing apiary on the isl-

and. Investigation, however, showed many bees already on the island in caves, and Mr. Wood reluctantly gave up the scheme. We predict Mr. Wood will return here some time and become one of our successful bee-keepers.

AN EPISODE.

Bee-keepers should not be unduly observing in the city of Los Angeles, or perhaps, for that matter, in any other city. The writer was recently sauntering along in the suburbs of the East Side, and, observing a blue-gum tree nearly in bloom, stopped to give it a more critical examination. While indulging in this laudable purpose a lady from a house near by skipped out to the sidewalk and shouted, "Air you the city tree-inspector?" The front rim of my straw hat came down from an acute perpendicular to a horizontal position with alacrity, and I meekly replied, "No, mom, I am not the official inspector.

"Well, what on earth are you staring up all the trees for?"

"My dear mom, I am a bee-keeper, and I am merely inspecting the mellifluous inflorescent condition of the frondescent furfuraceous flow ——"

"Whew!" said the lady drawing a deep breath. "Say, stranger, if you are one of them scientific fellers, who don't know any better'n to sling around such words as them 'mungst common folks, you jest step into our back yard. You'll find a humpbacked cherry-tree there you can talk to by the hour. Mebby you'll be useful enough to straighten it. Good bye," and she ambled into the house.

I did not interview the cherry-tree, but peacefully pursued my way with less slant to my hat-brim, and sighing to think that the free ways one enjoys in the country can not be brought into the city without causing criticisms.

WINTERING IN THE SOUTH.

A REAL PROBLEM; SOME OF THE DIFFICULTIES IN FEEDING TO PREVENT STARVATION.

By Adrian Getaz.

There is no wintering problem in the South, is the general verdict of all our leading writers. That is true in a certain sense; but nevertheless there are some serious difficulties, of course of a different nature from those met in colder climates. Here in East Tennessee the winter period begins about Nov. 1, at the end of aster-blossoming, and ends some time during the latter part of March when the maples blossom — a period of nearly five months.

The chief difficulty lies in the nature of the weather, which is not cold enough throughout the winter to stop entirely the working and flying of bees. The general program is a few days of rain, followed by a day or two of cold and clear weather; then the temperature rises gradually during a few days. During that time bees fly every day. A great number go out too late in the evening to come back before getting chilled, and are lost. If the sun strikes the hive they will come out when the air is too cold, and be chilled before they have been able to get back. Sometimes, if there is snow on the ground, they are blinded by the light, and fall down to rise no more.

After a few days of rising temperature the rains come again; then a cold wave, and the process is repeated through the whole winter. For a variation some snow takes occasionally the place of the rain — rarely more than a few inches, which disappears during the following warmer days. Once or twice during the winter the temperature may fall quite low (in the neighborhood of zero); and the snow, if there is any, may not disappear during the following days of relatively high temperature. We have then, for perhaps two or three weeks, a state of affairs more like the northern winters except that the temperature does not fall nearly as low. That kind of climate causes considerable loss to the apiarist. In the first place, some bees are lost by not being able to return home, either by being chilled or by some other accident. Then there is, during these warm days, quite a consumption of honey, and, worse than all, quite a little amount of brood raised, which entails not only a diminution of stores but a loss of vitality on the adult bees. If that brood were raised safely, the loss might not be great; but the trouble is, when the next cold wave comes it can not always be covered or fed; and by next flying-day, quite an amount of it will be dead and thrown out. As the spring draws near, this state of things gets worse. The warm days are still warmer; and the cold spells, though not so cold and not so frequent, are yet cold enough to occasion a considerable loss of brood, even after the blossoming of maples and peach-trees. The greatest danger at that period is from the stores giving out, which happens more frequently than an inexperienced person would suppose.

To guard against all this, one or two things must be done. The first is to be sure that every colony has a good deal more than enough honey before entering into the winter period. Another is, to use chaff hives, not so much as a protection against excessive cold as an equalizer between days and nights and between cold and warm days. With a chaff hive, even if it is exposed to the sun, which is the best, the interior of it will, as a rule, never get warm enough to induce the bees to fly unless the outside temperature is sufficient to permit them to do so safely; and the heat thus stored up in the chaff is there protecting the colony during the night. A double case without packing will not do. It will, of course, keep off the warmth during the day, but leave the hive colder than ever during

the night, as the space between the walls is never air-tight, and will admit a circulation of cold air. So far as I can judge, the colonies in chaff hives raise a little more brood than those in single-walled hives; but they lose only very little of it, and that only during the most marked variations in temperature.

Feeding in the early spring to remedy the lack of stores has not proven very satisfactory. Feeding in the hives during day time almost invariably induces robbing. Feeding at night or during cold days, requiring the removal of covers, packing, etc., more or less injures the bees. Besides, it is too cold outside of the cluster to take the feed, and they may starve by the side of the feeders unless the feed is warm. If done in that way the feed ought to be as warm as possible. It may be at a boiling temperature. If cold it will not be taken until the next flying-day. Then the bees, on discovering it, will get excited and set up a great buzzing at the entrance, and attract the robbers.

Feeding combs of honey on top of the frames has the same disadvantage, only worse, as the smell of the transferred honey will be sure to induce robbing. Feeding outside has the disadvantage of being too cold — that is, after the bees know where the feed is they will go there every time they can barely fly. As the feed is colder than the air, it will chill them. This could be obviated by taking the trouble to have the feed warm. There remains yet the objection that the colonies which need feeding the most would be the ones getting the least.

Feeding in Boardman's way, at the entrance, can not be practiced in such cases, as the nights are too cold to permit it. This may sound very strange, but it is so. In northern countries there is a great deal of snow on the ground, and the heat of the sun is employed in melting the snow instead of raising the temperature of the atmosphere. By the time the snow is melted the season is well advanced, and the temperature rises at once considerably. In the South there is no snow at that time of the year, and the sun is higher in the skies; so the temperature rises during the day and falls at night, making then a considerable discrepancy. Perhaps the success might be obtained by feeding at the entrance with warm feed, but I have not tried it.

One more drawback in southern wintering must be mentioned, viz., robbing. This may be termed what A. I. R. used to call quiet robbing. During the warm spells of weather the bees will hunt up every hive and crack in search of something sweet, and queenless or weak colonies are almost sure to be robbed. It is nearly impossible to detect such robbing. It goes on little by little every warm day. As the old bees as well as the young ones take a playing-spell during the few warm hours of the warm days, the robbed and robbing colonies can not be distinguished from the others except by the debris of wax which may perhaps be seen at the entrance of the robbed colony.

It is a well-known fact that a strong colony will start out earlier in the morning than a weak one. During these warm winter days a strong colony may thus gain the entrance of a weak one, and begin robbing on the honey outside of the cluster before the "inhabitants" of the weak colony are fully aroused. I have lost a few small colonies in that way.

I found another cause of winter loss. Sometimes the weather is very dry from August to the end of the season—in fact, so dry that nothing can be gathered at all. In such cases no brood is raised during that period, and the bees going into winter quarters are already some three or four months old, or about that. Their vitality is already nearly at an end, and during the winter they die off at a fearful rate. This state of things is aggravated by the presence of bee-paralysis, and many colonies simply die out.

Knoxville, Tenn.

[I take it that the wintering problem in your locality is more serious than in many portions of the North where it is extremely cold. It would appear, then, so far as wintering is concerned, that it is better to be clear north or clear south. In the extreme North, bees perish because of extreme cold; in the South they are liable to die from starvation, or be robbed out by other bees. The condition of extreme cold can be met by protection; the other one, starvation, can be met by judicious feeding; but in the middle section it is difficult to even feed. If I am correct, then there should be a large supply of sealed stores in the fall.—ED.]

CLIPPING QUEENS' WINGS.

EARLY EGG-LAYING OF A QUEEN; LARGE NUMBER OF QUEEN-CELLS ON ONE COMB.

By Elias Fox.

Friend Root:—I should like to say a few words on several subjects. I would say to Dr. Miller that he offers no better evidence than I relative to bees puncturing grapes. If they can cut holes through new oil cloth over the top of the frames (which they do) they can surely cut the skin of a grape if they were so inclined; but here is the point: Nature has forbidden them. I am no pumpkin-eater, Dr. M., consequently I have had no experience in this line.

A word in regard to clipping queens' wings. I have practiced this for 14 years, and my queens' wings are just as long and just as strong to-day as they were then; and, in fact, it is the *only* perfect method of manipulation to-day, where bees are increased by natural swarming. Everybody knows that when bees swarm their instinctive thought is to get away from their old hive; but as soon as they find their queen is not with them this thought is reversed, and that means that every thing else is

shut out of thought except returning to the old hive which they will invariably do unless they are joined by another swarm that *has* a queen. I have had as many as five swarms in the air at once, and each one returning automatically, as it were, to the old stand, and all readily entering their respective new hives, and the work is all done inside of 20 minutes.

In my bee-keeping experience I have had *one* case that I have never heard of or seen on record; that is, a queen fertilized and laying in four days from the cell. Now, don't let some one jump up and say this is only guesswork, for such is not the case. It occurred at about the beginning of my bee-keeping. I was desirous of increasing and Italianizing. I took a frame of eggs and bees from a strong colony, and placed it in a nucleus hive, and they built cells, and about the 12th day I removed all but one, and on the morning of the 16th day I made an investigation and found the cell not yet hatched. I looked again at noon, and found the cell hatched, and a fine thrifty-looking queen. On the afternoon of the fourth day from this time I made another examination and found the queen had just begun to lay. I caught and clipped her, and she went right along with the business of the hive and proved to be a fine prolific queen.

Now for another story which to some will seem quite as incredible. Last summer I had a queen that I was desirous of breeding from; and one afternoon late I took an eight-frame hive and took a frame of brood from this queen and put it into the hive. I then took a frame with adhering bees from the upper stories of five different hives and put into this hive, and shook the bees from as many more frames from this same upper story in front of this hive, smoked them in, put a wire screen over the front of the portico, put the hive into my buggy and brought it home with me and set it in my garden. I did not look at it until the morning of the 14th day, when I found four queens tumbled out at the entrance. I opened the hive and found 65 perfect queen-cells on this one comb. Who can beat it? I think I can account for the large number, and I should like to hear from the high authorities to see how many get it right.

Hillsboro, Wis., Oct. 30.

[The circumstance you refer to, of a queen laying inside of four days from the date of hatching, is perhaps a little out of the ordinary; but nevertheless, if I remember correctly I had several such cases come under my observation in our apiary while I was actively engaged in raising young queens. At the time the matter came up in the journals it was concluded, I believe, that very often queens were confined or kept from emerging from the cells by the bees. Indeed, some took the ground that they were actually fed in the cells. In some cases it was estimated that the queens were confined anywhere from three to four days after the date when they should be hatched. This being the case, it would be nothing strange if such queens should begin laying within four days after emerging from the cell. But in ordinary cases, when the young queen hatches at the end of the 15th or 16th day from the laying of the egg she will not begin to lay very often before eight or ten days.

Regarding the very large number of queen-cells on one comb, I would state that, shortly after friend Jones introduced into this country and Canada the Holy Land bees, there were a number of cases reported, I think, where as many as 50 and even 75 queen-cells were found on a single comb. Holy Land bees will build more cells than any other race of bees that we know of. I remember once of holding in my hand a comb containing nearly 50 cells. It seems almost incredible, but 20 of these cells hatched out while I was holding the comb, or within a period of 30 minutes. This was recorded at the time in GLEANINGS, and now appears under the head of "Holy Land Bees" in our A B C of Bee Culture. So many young queens hatching at a time was something extraordinary, and probably will not be observed every day by queen-breeders by considerable. If the colony you refer to, that reared 65 perfect queen-cells on one comb, were Italians, the fact is something extraordinary. Six or eight cells are as many as these bees will usually raise on a single comb.

I omitted to state that, when these twenty young queens hatched inside of 30 minutes, two or three of them took wing and flew a short distance, but were recaptured. I saw this with my own eyes, and I know there was no mistake. This would go to prove the statement above, that some of these queens had been held back probably two or three days beyond the time when they should ordinarily hatch.—ED.

FULL SHEETS OF FOUNDATION IN BROOD-FRAMES.

Question.—Which pays better—to put full sheets of foundation in the brood-frames, or put in only starters and let the bees fill the frames with natural comb?

Answer.—That depends a good deal on the wants of the apiarist. If he is working for extracted honey, and wishes his frames filled with worker comb, so that he can use these combs in any place in the apiary, then it is almost a necessity to use foundation; otherwise only drone comb will be built in the upper stories, over the brood-combs—especially where a queen-excluder is used, as it is best to do when working for extracted honey. Extracted honey is best produced with very strong colonies; and such colonies, as a rule, will build mostly drone comb when a honey-flow is on, while such comb is a disadvantage to any apiarist only as it is kept for special use over queen-excluders. Of course, drone comb works equally well with worker comb for extracted honey, where queen-excluders are used; but unless the average apiarist is very different from Doolittle, there will come a

time in his life when he will say he would give almost any thing if these combs were only worker combs so he could use them just when and where he pleased. Where half-depth combs are used for extracting, as the custom of some is, it does not make so very much difference whether they are of the worker or drone size of cells; and in this case I would allow the bees to build their own comb in the frames. If the apiarist is working for comb honey, then "which is best" will depend on whether he is going to allow swarming in his apiary or whether he is going to keep his bees from swarming. If the latter (I doubt about his success in this, however), then he will have as much need of foundation when combs are being built as he would if he were working for extracted honey, as strong colonies building combs under any system of non-swarming will give a drone size of cells more often than otherwise. But if he is to work his bees on the swarming plan, and use full sheets of foundation in the sections (such use of full sheets being considered right by the largest part of our practical comb-honey producers), then I should say it would pay to allow the bees to fill the brood-frames with natural comb. Each new swarm seems to go prepared for a start at comb-building in its new home, and such building seems to give them a greater activity than they show if the hive is supplied with empty combs or frames of foundation; and I often think that, if the hive is contracted so as to hold two-thirds of the number of frames needed to fill the whole hive, this number of combs will be built by the bees without the loss of a single pound of honey to the apiarist, while the cells will be very largely of the worker size, unless an old or failing queen is used, in which case little else besides drone comb will be the result, under any circumstances.

But really, the nicest way, where we decide to have our combs built by the bees, is to set apart each year all the colonies we may happen to have, when the honey-flow commences, that are not strong enough to do good work in the sections, or upper stories of hives for extracted honey; and as soon as the honey-flow commences, take away all their combs, giving the brood to other stronger colonies to make them still stronger; when just what frames these little colonies of bees can work on to the best advantage are to be given them, each having a starter of worker comb or comb foundation in it, say from half an inch to an inch in depth. In this way I can get the nicest of combs built; and by taking them out in such a way as to keep the bees desiring only worker brood, a worth of combs may be obtained greater than any value of honey which it would be possible to produce with them. At least, this is the way I think I have proven the matter; and if any are skeptical on this point, it will be very easy for them to test the matter for themselves; and if the plan does not prove in their hands as it does with others, then they can change to what seems best with them.

CELLAR WINTERING.

Question.—I have a few colonies of bees which I wish to winter in my cellar; but I fear to put them in, as some of the family must go into the cellar two or three times a day for vegetables, and I fear this will be a damage to the bees. Do you think such a cellar would do for wintering bees?

Answer.—A cellar which will keep vegetables well will answer well for wintering bees; and going into it every day need not disturb the bees, especially if they are placed so the light does not strike them. If the cellar is dark, all that is necessary is to hang a thick blanket in front of the hives, or turn the entrances of the hives toward the wall, so that the light from the lamp shall not shine on them; or a part of the cellar may be partitioned off so as to make it dark. The hives should be set from eight inches to a foot from the ground, so as not to be too damp, and the platform they rest upon should be large enough for only one hive, and rest on the bottom of the cellar; otherwise when one hive is touched, all are jarred; and any trembling of the floor above will cause an uneasiness among the bees. The hives can be piled on each other till they nearly touch to floor above, but should not be connected with it, or more than one tier with other tiers. The full entrance should be given; and if a bottom-board giving a two-inch space below the combs (like Dr. Miller's) is used, so much the better. The bees should be set in from the middle of November to the middle of December, on some quiet day when the hives are not frozen to their stands, if possible. It is generally thought best to allow them to remain in the cellar till soft maple and elm begin to bloom; but some think it is better to set them out earlier, or as soon as any colony on its summer stand obtains pollen from any source. The right temperature of a cellar to winter bees is from 42 to 46°; but if fixed as given above they will do well as low as 35 to 40°. If the cellar is one where the temperature goes as low as the freezing-point, and stays there for any length of time, I should prefer to leave the bees on their summer stand; for a continued temperature at about the freezing-point, or a little below, seems to be very injurious to bees confined in a cellar or room.

AN AIR-TIGHT SUPER FOR COMB HONEY; DANZENBAKER'S REPLY.

I find a Miller Straw, that was hardly intended to break my back, but rather to break the

idea that I might "possibly be right" about the bees having to gather propolis to seal the supers air-tight before commencing to store honey in supers. You may be strongly of the opinion that your bees do nothing of the kind; they always work much faster if the super is secured "ready made" air-tight for them by me, as the smallest leak for the warm air of the supers carries off the bee-heat, so essential to rear brood, and to spread and shape the wax and cappings. I always find the fancy filled sections in the center of the super in the warmest part of it, as most other raisers of fancy comb honey do. The secret of having sections fastened to the bottom (without puttering with an extra bottom-starter) and all round to their sides, is, to have the supers air-tight and uniformly warm, which is best secured when they are air-tight at the top and sides; no leaks for me, please, anywhere, except at the entrance, where I have ⅞ in., full width of hive front. Early in the season there is not an hour in ten days where propolis is soft enough for the bees to collect it, no matter how much they suffer for it nor how much they lose by it, requiring two-thirds of the bees to stay in the hive warming, leaving a third for the field, when an air-tight covering might spare a half or two-thirds to go gathering at a time when an ounce of honey for brood-rearing means 1 lb. of surplus later on—just 16 to 1. I prefer to err on the warmer side of the case every time in practice, and I have some pleasing commendations from others who have tried it.

I have known bees to build comb clustered in the joint of a rail fence; but I know they could do four times as much in a close warm hive; and I will assert, and venture to prove, if needed, that a snug warm super is worth two or three ordinary ones. In fact, in poor years they are the only ones that secure any surplus in comb honey at all.

F. Danzenbaker.

[The following very complimentary notice of the Danzenbaker hive and system appeared in the *Bee-keepers' Review* for October.—Ed.]

Mr. F. Danzenbaker was one of my principal competitors at our Michigan State Fair this year; in fact, he carried off the first prize for the best comb honey in the most marketable shape. He certainly had the finest honey I have seen this year, and I have exhibited honey at five State fairs. His honey was gathered during August in this State, mostly from that famous willow-herb that springs up in the northern portion of the State after forest fires have run over the ground. Mr. Danzenbaker secured his honey in his new hive; and, by the way, his hive received a special diploma at the same Michigan State Fair, where he was kept busy much of the time in explaining its advantageous features to a crowd of inquiring bee-keepers.

E. KRETCHMER AND THE NEBRASKA BEE AND HONEY HOUSE.

Mr. Root:—I notice in Gleanings of Dec. 1 an article from the pen of E. Kretchmer, under the caption of "The Nebraska Bee and Honey House." We desire to say that, while we are feeling justly proud of this honey-house, and of the progress made by bee-keepers in this State, yet in justice to Mr. Kretchmer we desire to state that not *all* of the success achieved in this State is due to the gentlemen named in his article, but that a very great amount is due to Mr. Kretchmer himself, who has always been found in the front rank, and with his shoulder at the wheel, helping along this young but fast-growing interest in Nebraska, and as much success is to be attributed to him as to any other one person. For several years Mr. Kretchmer has been an honorary member of the Nebraska Bee-keepers' Association, and nothing lends more zeal to our meetings or annual exhibits than the presence of Mr. Kretchmer and his excellent wife. We feel more honored at this time in rendering to him that mead of praise which is justly due him as one of the hardest workers and deepest thinkers who preside over an apiary west of the Mississippi.

Friend, Neb., Dec. 5. E. Whitcomb.

[Doubtless Mr. Kretchmer was too modest to speak in his article in his own behalf. We are glad to have him receive the credit he deserves in the matter.—Ed.]

WHAT CAN BE DONE WITH 1 LB. OF BEES AND A QUEEN AT THE PROPER SEASON.

Early in April I had two hives shipped from Michigan. On looking into them I found them to be without queens. At once I sent away for two queens. By the time they arrived, there were no bees. Then I sent at once for 2 lbs. of bees, and started out again. Below is the result:

HIVE NO. 1.

1 queen from Jennie Atchley	$1 00
1 lb. bees from Pennsylvania, including ex.	1 60
Sections and foundation	20
Total	2 80
34 lbs. honey in sections, at 12c	$4 08
1 swarm from same	5 00
Total	9 08
	2 80
Net gains	6 28

HIVE NO. 2.

1 queen from Taylor, Arkansas	$1 00
1 lb. bees from Pennsylvania, including ex.	1 60
Sections and foundation	15
	2 75

This queen was killed during August, and four queen-cells started. I got 17 sections of honey at 12c 2 04

No swarms. This shows the difference in queens. This queen must have been an old one, because she did not lay well from the start.

Loss	71

Both queens were untested.

On hive No. 1, the gain was	6 28
On hive No. 2, the loss was	71
Leaving a net gain of	5 57

Mayfair, Ill., Nov. 13. H. S. Jones.

[A number of years ago one of our neighbors, Mr. Harrington, an expert queen-breeder, took a pound of bees in late August, and by giving them untested queens, and feeding them, he had them increased up to five fairly good colonies for winter by Nov. 1. This shows what can be done in the way of increase. Your results, both in increase and honey, are perhaps as good, or even better.—Ed.]

OHIO PURE-FOOD LAWS.

Mr. Root:—I notice in the report of the N. A. B. convention, page 724, *American Bee Journal*, that Dr. Mason, in talking about our pure-food laws, says: "Dealers don't dare to offer any thing that they mistrust is adulterated." Now, is not Dr. M. away off in this statement? and is not the dealer safe in offering any mixed or adulterated goods if there is a formula printed on the package? Certainly the grocers in my part of the State offer glucose mixtures freely, and no one questions their right to do so, the same as oleo, prepared mustard, etc., as long as the printed formula is on the package. I supposed the object of the law was not to prevent adulterations, but to make the adulterators sell their stuff for what it is.

Oberlin, O., Nov. 19. Chalon Fowls.

[Although the report referred to may not show it, Dr. Mason implied in his talk that the samples were not labeled in a way that would show a certain percentage of glucose. Taking the quotation that you refer to, notice he says that "dealers do not care to offer any thing that they mistrust," etc. You will see there could be no *mistrust* if there were a formula somewhere on the package.—Ed.]

ANSWERS TO QUESTIONS; OLD VERSUS NEW COMBS; WIRING; NATURAL-BUILT COMBS OR FOUNDATION.

1. I know a good deal about bees and a great deal I don't know. Please answer the following questions: Will old combs that have been used for brood be as good as new comb, to be used to fill for extracting, or will the honey be darker in the old comb? 2. Are new combs built by the bees without wiring sufficiently strong to be used in the extractor without breaking? Is a two-comb extractor sufficiently large for 40 hives, spring count? 4. Would you consider it profitable for me to buy foundation and pay freight and duty, and fill the frames full for both extracting and brood, or let the bees do all of the building, with the exception of narrow starters? Which do you consider the more profitable—whole frames or half-frames to be used in the top for extracting?

Steveston, B. C., Nov. 14. M. Steves.

[1. It is generally considered that the honey from old combs is liable to take on more or less of a darker shade than when extracted from new combs. To get, then, a really first quality of extracted, it is better to use combs not too old.

2. Yes and No. Some bee-keepers do get along without wiring the frames, and claim that it is not necessary; but the majority insist that they can work faster, because there is no danger of breaking out combs when wired. I should never think, myself, when wiring is so inexpensive, of getting along without it.

3. Yes.

4. Better buy your foundation in Canada. E. L. Goold & Co., of Brantford, are prepared to turn out the new-process foundation. It is usually not profitable to pay duty when the same article, or practically so, can be bought at the same figure without the duty added. It pays to use full sheets of foundation rather than starters. Mr. Chalon Fowls, of Oberlin, O., once said to me that he could not afford to buy hives, but he could afford to buy brood-frames and foundation—full sheets at that.—Ed.]

BEAR-HUNTING IN ARKANSAS.

Mr. Root:—I have shipped to you by express a two-year-old bear-foot, and hope you will tack it up in your workshop that the young boys and girls may see what Arkansas grows. Myself and party have hunted 20 days, and killed 18 bears and other game too numerous to mention. I should have been pleased to have you with us, and think the meat diet would have been all you could ask for.

My honey was a failure, the first time in 25 years. Bees are in fine condition now, with plenty of stores for winter. Anthony Opp.

Helena, Ark., Nov. 27.

[The foot came to hand in due time and in good order, and a fearful-looking thing it is. Let the readers of Gleanings imagine a cat's paw with claws extended as big as or bigger than the foot of an ox, and they will have a fair idea of the thing.—A. I. R.]

A POINTER FOR THE 8-FRAME SIZE OF HIVE.

Back in the 70's I wrote you for a 10-frame Simplicity hive. I had previously been presented with a copy of Quinby, and used the hive he recommended, but found it too large for this locality. After using the 10-frame Simplicity for three seasons I cut it down to 8 frames, and have not since regretted the change, although I am some seasons troubled a great deal with incessant and uncontrollable swarming, as I run only for comb honey in 1-lb. sections.

Cushing, Ala., Oct. 12. Rob't F. Coles.

[This has been the experience of many another; and yet there is quite a large following, who, after having experimented, think just the other way. The result seems to vary with the person and the locality.—Ed.]

5000 LBS. OF HONEY FROM 130 COLONIES, WITH AN INCREASE OF 45.

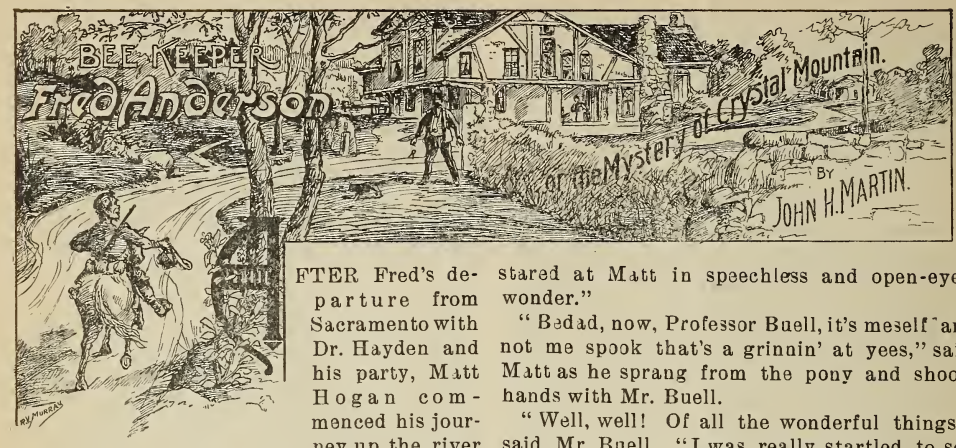
I have harvested this year, from 130 colonies, about 5000 lbs. of honey, mostly comb. About 4000 lbs. are clover, basswood, and some earlier make, and about 1000 lbs. is from buckwheat. I increased to about 175 colonies. Swarming was excessive. F. Greiner.

Naples, N. Y., Oct. 31.

Is honey an animal or vegetable production?

Bath, O., Nov. 9. A. S. Gundrum.

[It is generally said to be an animal production; but without any question its *source* is vegetable.—Ed.]



FTER Fred's departure from Sacramento with Dr. Hayden and his party, Matt Hogan commenced his journey up the river astride the little Indian pony. Matt was a sociable fellow, and his tongue was never idle when anybody was near to talk to; and now, having only the pony for a companion, he kept up a running conversation at times with it, as the mood seemed to strike him. When the pony would persist in going at a too rapid gait, Matt would shout, good naturedly, "Whoa. now, me beauty, take a rist. Yees are too ambitious intirely. Yees must spare yees nimble legs; for did yees but know it yees are to be a lady's pony. A foine lady she is too, barrin' a few mintal throubles. It is becoming of yees to be promoted from the society yees have been a kaapin', to the gintle society of the professor's daughter. But methinks me charmin' Biddy Malooney would look quite as well aslant of yer back; but, be gorry, me Biddy 'd never disgrace yees to get aboard of yees asthraddle. But about the professor's daughter, it's meself that's doubtful. Her mintal throubles have so unbalanced her mind, and body too, that she may have to sthraddle yees to hould on, sure. Now, I am a wontherin', too, if all those women who imitate men's ways are not a little mintally unbalanced. Be gorry, it's meself that's a believin' they are. Ah, luck-a-day! this is a quaar world intirely, and it's quaar people we are jostlin' against all the time. But yees are a beautiful baste, and Adrietta is yer name. It is such a beautiful name, too—a match to the foine lady's name that'll ride yees. Bedad, now, I don't believe Fred heard the docthor when he tould me yer name. He would have been sthruck wid it, sure."

So Matt Hogan beguiled his time as he leisurely journeyed up the river; and on the third day in the afternoon he rode confidently into the grounds and up to the residence of Prof. Buell, who was working at the cyprus hedge, and did not notice the approach of Matt until he was within a few feet of him. When he did look up and behold who was before him, his pruning-shears dropped from his hands, and he stared at Matt in speechless and open-eyed wonder."

"Bedad, now, Professor Buell, it's meself and not me spook that's a grinnin' at yees," said Matt as he sprang from the pony and shook hands with Mr. Buell.

"Well, well! Of all the wonderful things," said Mr. Buell. "I was really startled to see you. Surely, Matt Hogan, we thought you dead."

Mrs. Buell, hearing the greeting, came to the door and also expressed her unbounded astonishment.

Matt briefly narrated the incidents of his escape from a watery grave, and finally of his meeting with Fred Anderson in Sacramento.

"Fred and I thought each other drowned, sure. The lasht thing I remimber was our tumblin' into the wather on the work-binch, and the baas and the foine honey all a tumblin' with us. And (do you belave it, Misther Buell?) we were riserrected to each other furninst a honey show in Sacramento."

"Well, Matt, we are heartily glad of your escape and return; but what has happened to Fred that he did not return with you?"

"Furninst all of his bad luck, Mr. Buell, Fred is yet a baa-man, honor to his grit, and has gone off to the mountains with a great baa-master. He bought this pony of the baa-master for your daughter, Mr. Buell; and in deliverin' it to yees I must say it is a gintle and beautiful pony."

"It is a beauty indeed," said Mrs. Buell. I knew we could trust Fred to select a pony. Now we must give it a pretty name."

"An', sure, that is what she has already," said Matt. "It is much like yer daughter's—it is Adrietta."

"Adrietta!" said both Mr. and Mrs. Buell, putting up their hands, and advancing a step. "Adrietta! Adrietta! impossible!"

"Sure, it must be possible," said Matt, taken aback by the earnestness of Mr. and Mrs. Buell. "When I was a lavin' the corral with the pony it was tould to me by the docthor."

"Doctor!" said Mr. and Mrs. Buell again, in greater excitement.

"Sure, Misther Buell, it must be me clumsy way o' sayin' it. But I'm thryin' to say that the man that Fred has gone away with, and the man he bought the pony of, and the man

that tould me the name of the pony, is Docthor Ralph Hayden."

"No, no! heavens, no! Ralph Hayden!" said Mr. Buell, grasping Matt's arm convulsively. But he immediately loosened his grasp and turned to the aid of Mrs. Buell, who had swooned quite away and would have fallen but for his timely support. Mr. Buell, with words of endearment, clasped her in his arms and carried her into the cottage.

Matt Hogan was dumbfounded at the effect of his words, and for once in his life his tongue failed to articulate. In a few minutes, however, he recovered and thus to himself soliloquized:

"Now, be gorry, that's sthrange, and I wonther again am I Matt Hogan or what am I? Is me tongue a shillaly, an' is Docthor Hayden the Divil intirely? It's meself that'll be lavin' this place, for I belave it's bewitched it is. But what's that a rastlin' the bushes? Och! sure, it's me pretty misthress Alfaretta, an' it's a singin' her song she is. She'll have her lover on the saa, wher'r no. Now I'll be on me gintility an' inthroduce the pony."

"A delightful afthernoon, me lady," said Matt, with hat in hand, as Alfaretta approached. "Wid yer permission I'll inthroduce to yees the pony that yer friend Fred Anderson bought. It's meself that brought it all the way from Sacramento, an' it's meself that's a thinkin' yees will fit the back of the pony bether than meself. Yees will look as charmin' as the break of day, when yees ride."

"Ta, ta, Hogan," said she, pointing her finger at him. "How mistaken you are! That's not a pony; that's a jack mermaid to carry me over the water, under the water, over the trees, under the trees. Why, Hogan, you are crazy; your eyes look like peeled onions, your ears like lobsters—crazy, crazy. Can you gallup a broomstick, Hogan?" and Alfaretta teetered toward him sidewise.

Matt could bear no more, and made a break for the Buell wharf to hail the little steamer that was puffing up the river. Alfaretta shouted after him, "Look out, now, Hogan! if you follow the slant of your nose you will go over the trees!"

While Matt was frantically signaling the steamer, Mr. Buell came in haste to the wharf and exclaimed, "Why, Matt, why such haste? I will row you up to Mr. Ghering's."

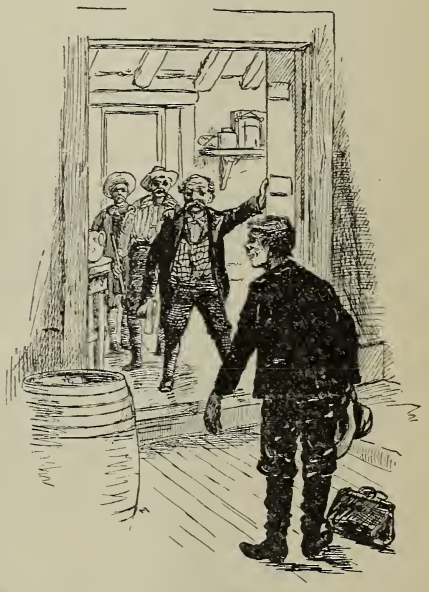
"No, no! Misther Buell; yees are too kind intirely. I'd bether go on the sthamer. Me thick tongue might say somethin' that'd tip the little boat over. No, no! it's safer for me to go on the sthamer."

Nothing could induce Matt to stay longer; and when the steamer answered his signal and came alongside the wharf he hastened on board, and scarcely uttered a word until, an hour later, he was safe on shore at Ghering's ranch.

It was well toward evening when Matt landed, and the fog was drifting over land and water. He ran lightly up the wharf, and anticipated meeting one or more of the men from the ranch: for upon the well-known toot of the whistle before drawing up to the landing, some one usually came down to see what was put ashore. The men, however, were eating their supper, and the inner man appealed more strongly to them than the outer man or whatever it was at the wharf.

José Silvera finished his repast first, and, lighting his pipe, strode away from the awning, remarking that the steamer had by this landed, and he would see if it was a señor or señorita that they'd put ashore.

With a retrospective feeling of pleasure toward the bacon and eggs he had just swal-



MATT SURPRISES THE GHERING RANCHERS.

lowed, José tramped along with eyes bent to the ground; but when about a dozen yards from the house an evident presence made him look up, and there, through the evening fog, not fifteen feet away, stood Matt Hogan, silent, with arms folded across his breast. José's pipe suddenly dropped from his mouth, a shower of tobacco sparks following it to the ground, and, with a yell of terror, he whirled around and seemed to fly toward the house.

"By the great toe of Paater," said Matt, "that's sthrange again. Me very silence seems to break the sinse of people. It's not Docthor Hayden that's the Divil this time; it's me own silf, Matt Hogan."

While muttering thus to himself he rapidly followed the flying José; and as José dashed into the circle of his surprised companions, who were still around the supper-table at the rear

of the cabin, Matt heard him shout, "El diablo! spirit! gose! give me the gun! Matt Hogan's gose!"

It is a very strange freak of the human mind, when frightened by things supposed to be supernatural, to grasp some deadly weapon for defense. So José called for the gun; but luckily, perhaps, for Matt Hogan, the guns were in the house, and Mr. Ghering sat wedged against the door while he was unlimbering his bulky form. Matt Hogan, seeing the front window open, as a means of self-preservation skipped through it; and when Mr. Ghering and José opened the rear door for the gun, Matt stood with folded arms in the center of the room.

Another yell escaped José, and a "Mein dunder" from Mr. Ghering. He essayed to close the door, but seemed to be for the moment petrified. "Hello, boss," said Matt, in his old, natural way, "what's the matter of all you fellows? I'm not a diablo nor a spirit nor a subject for a dose of lead. I'd prefer a dose of yer bacon and coffee. Give me a lick at it, an' I'll show yees that I'm flesh an' blood an' jaw."

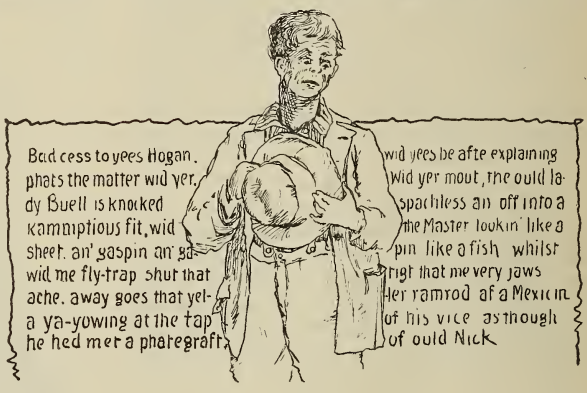
Mr. Ghering, like a true phlegmatic Dutchman, soon recovered from his intense surprise. The rest of the men were no less surprised, for they had all given Matt up for lost. They soon quieted down, and even José came back into the circle, with some hesitancy. Matt's keen relish for the supper dispelled all doubts as to his corporeal existence, and the men began to congratulate him over his escape, and to ask questions. It was at a late hour that night when they all retired, and even then José imagined himself in conflict several times with "un diablo."

Before retiring, Mr. Ghering said, "Vell, Matt, you haf missed several of our interesting meetings at the Dawson place. I tells you they vas become goot, first rate. They vas profitable. More peoples come than efer. The widow Dawson haf improved shust splendid. She vas more as ten years younger, mit plushes all ofer her face, shust like von girl shweet sixteen years oldt. I tells you what, Matt Hogan, vidow Dawson vas all vool, von, doo, dree, yard-sticks vide."

Matt looked curiously at Mr. Ghering, wondering which was the more interesting to Mr. Ghering—the meetings or the widow. But Matt was too well bred to chaff the boss, and turned the subject of conversation by asking, "Well, Misther Ghering, did yees take good care of me few swarms of baas while I was gone?"

"Not much," said Mr. Ghering; "the water haf let them alone, and so haf I. But, Matt, you will nefer want to look in the square face of a bee-hife again, after being so nearly drowned with them. You'll nefer succeed a pudering with those McBurger Dawson bees. They are efil-spirit possessed; no, mine cracious, I vill keep von mile away from them, and advise you to do the same."

Matt Hogan had a curious beaming in his eyes, as much as to say, "Which is the more dangerous—the stings of bees or the blushes of Mrs. Dawson?" But Matt, remembering his good breeding again, replied, "My friend Ghering, sure and that's where yees be off yer reckonin'; for of all the occupations of me life, there's nothing took hould of me so strong as the kaaping of baas an' the creatin' of the beautiful honey; an' though the little darlints sting me from head to foot, though with them I go into the river an' under the river, though me clothes are torn an' me bones crushed, an' if spirit-haunted an' divil-possessed, with them I'll for ever take me stand, me beautiful baas."



Last month was the warmest November in many years, according to the Weather Bureau. It has been a good time to get bees into winter quarters, and I hope that by this time the bees have been safely housed.

The Michigan State bee-keepers will hold their annual convention Jan. 1 and 2 at the Doniphan Hotel, Mount Pleasant. Rates, $1.00 a day. The first session will be on the evening of the 1st. There will probably be half fare on the railroads.

The evidence is now so full and complete, that it does not seem to me there can be any question that birds of various kinds have been making the pinhole punctures that have been laid at the door of the bees heretofore. Honey-

producers should not fail to impress this fact upon their fruit-growing neighbors. The use of the shotgun or rifle at the proper season of the year will destroy as well as scare away the real culprits, the birds.

In my editorial on page 865, in criticising Mr. Newman, especially for his non-action regarding dishonest commission men and adulterators of honey, I did not overlook the splendid work he had done in the past in the line of defense of the rights of bee-keepers; and although I did not refer to it in that particular editorial I have done so on other occasions, so that I am sure our friends may know how I feel about it. The defense issue was good in its day, but there are other issues tenfold more important.

We have had some call of late for a honey-leaflet. As Gleanings has never had one, I requested Dr. Miller to get up something of the kind. It will not only contain information in regard to honey for the general public, its dietetic value, how to liquefy the candied article, etc., but will give recipes for cooking that have been thoroughly tested.

This leaflet will be sold at a trifle above the cost of printing, so that honey-producers may have them for free distribution to their trade and customers.

A very interesting illustrated article, written for the general public, on the subject of bee-keeping in the city, appears in the *Illustrated Buffalo Express*, from the pen of Rev. E. R. Hardy. The pictures are half-tone reproductions from real life, and a cursory reading of the article itself seems to show that Mr. Hardy is well up on the subject. So many of these articles, written for the public press, come from men who have gained their knowledge almost entirely from books, that it is most refreshing to read occasionally such an article as this that has been prepared by a real live practical bee-keeper.

The firm of George T. Wheadon & Co., of Chicago, is no more. After fleecing bee-keepers of their honest hard earnings (see *Am. Bee Journal*), it appears that the chief man of the concern has fled to Canada. Bee-keepers need to be warned that there are other concerns who are likely to fleece them in the same way. Better get a little less price, and deal with a reliable firm whom you know, than to trade with some concern you don't know that floods the country with "highfalutin" circulars, offering extraordinary inducements. You can set it down as a general rule, that the old reliable houses can do just as well as, and generally a little better than, the new ones, granting that the last-named are strictly honest. The old houses know the trade, and understand well the art of getting the best prices obtainable.

NOMINEES FOR THE NEW UNION.

It is high time that we had a change of front and a change in the administration of the Union. It seems that a correspondent of the *American Bee Journal*, signing himself "Union," is of the same mind. Here is what he says:

> The tone as well as the matter of Mr. Newman's "criticism" indicates to me that he proposes to stop all further proceedings toward amalgamation, and considers himself of much more importance than those who favor the measure, and while, only a servant, and handling our money, usurps authority; and I believe that just the moment any official puts himself in such a position, the sooner he is made to "step down and out" the better; and with that end in view I take the liberty of nominating Dr. C. C. Miller for General Manager for the coming year, and, for that matter, just as long as he proves himself efficient, and behaves himself; and, while I am at it, I want to renominate that faithful and safe counselor, Hon. R. L. Taylor, for President. I would like to nominate him for General Manager, but we can't spare him from the position he now occupies. Then let's keep G. M. Doolittle, Prof. Cook, A. I. Root, and Hon. Eugene Secor in the harness; and if the rest see as I do, we will put C. P. Dadant in the grand team; then if the new constitution should be submitted and adopted, in spite of Mr. Newman's opposition, we shall have a Board of Directors that has had years of experience, excepting Hon. Eugene Secor and Mr. Dadant, and they don't know so much but what they can learn from the other members of the Board!
>
> Perhaps I have done mischief enough, but I feel like saying that, if the new constitution is not submitted to a vote by the Advisory Board, according to the request of the United States Bee-keepers' Union; or if the members of the Board attempt to defeat its adoption, I have paid my last dollar into the treasury of the National Bee-keepers' Union, but shall pay in the future into the treasury of the United States Bee-keepers' Union, and I know of several who feel the same way.

Of course, Gleanings is not seeking to put any of its own staff forward, but it does indorse most heartily the list of officers above proposed, with the exception of the name of our senior editor, who, I known, feeling that he has somewhat dropped his hold on bee-keeping, would prefer some other name put in his stead. With this exception the list is most excellent, and, in the language of the editor of the *American Bee Journal*, referring to the same list, I say, "Hurrah for the nominations made by the Union!" Let us not haggle over little details, nor waste time in explaining things further.

In regard to this, Mr. Hutchinson, in a very able article in the *American Bee Journal*, has this to say:

> If we wait until a constitution is formulated in which no flaws can be found, amalgamation will never take place. It will be only by actual experience that we shall learn exactly what kind of constitution is needed. Without experience it is doubtful whether we get a up better one than the North American has now adopted—at least, not enough better to recompense for the delay. We need to get to work.

The duty of the present time is to see that the U. S. B. K. U. is perfected. When that time arrives I shall begin to feel that something will be done to forestall the dishonest practices on the part of unscrupulous commission men, and that something also will be done to prevent adulteration.

Our indexes for this year's volume are unusually full and complete. We have added a new index—that pertaining strictly to editorial matter, not to speak of footnotes. Besides, there is the usual index of illustrations.

THE ABUSE OF THE CREDIT SYSTEM.

The editor of the *Progressive Bee-keeper*, commenting on what I said on page 789 regarding the relation of the manufacturer and the dealer, and the folly of giving indiscriminate credit, makes these very pertinent remarks, which I indorse most heartily:

It seems a little hard to say that a real good honest man should not enjoy the confidence due him of his neighbor, and that the deserving should not get what they really deserve. But the real trouble, the saddest truth, the most humiliating fact is, while one good honest man will do just what he says he will, and meet his obligations, nine others, slovenly, careless, devil may-care fellows will not do so until they are dunned, bored, coaxed, and then perhaps will not pay at all. All this is what makes the credit-business unpleasant, very unprofitable, and a curse to the debtor as well as to the creditor.

I really believe some think that they accommodate a merchant by buying from him on credit as against not buying at all. This I believe to be an error. Speaking for myself, I would prefer not to take the chance of the credit system at all, only through the regular channels of trade with parties who have good ratings in the mercantile agencies, and who understand when they buy a bill of goods on thirty days' time, that it means thirty days, and not six months or a year. Again, it would seem that a man who is honorable, known among his neighbors as a man who would not abuse an accommodation, would better get that accommodation at home where he is known, than by humbling himself to strangers by asking for what he may be refused. Nearly all over this broad land there are banks and parties who loan money. Would it not be better, if you must go in debt, to get the money from them, pay them a little interest for the use of it, buy your goods for cash (getting the benefits of the discounts), maintain your dignity, uphold your good name, and be a man? There are some we know could not get accommodation at home, for the same reason that we have stated in the beginning of these remarks; but, dear friends, if you are one of this kind, *we* do not care to credit you either. We have some of your kind on our books now. We like to help a worthy, deserving man, but we must know him to be such before we extend our hand and our pocket-book.

BEES AND GRAPES AT THE MICHIGAN EXPERIMENT STATION.

Experimenter Taylor, it seems, has for some years been greatly interested in the production of fine grapes, growing as many as 30 different varieties. Observing the bees at work on some of the kinds at various times, almost led him to believe that the bees might be and probably were guilty of doing some damage.

This season he conducted a series of experiments, the results of which not only exonerated the bees, but actually proved that they were of great value in preventing the decay of sound grapes. He had observed that different varieties crack in different ways; "that is, some crack, so to speak, longitudinally and some crosswise, and that they also crack from a somewhat different combination of causes. These, as I judge, are three: moisture from without, moisture from within, and external pressure." The Ulster and Niagara had a skin of such toughness as to be able to resist these forces, but not so with the Delaware and the Lady; and during the past year the Dutchess and Salem have to be added to the list, owing to the wetness of the season.

To determine just what effect the bees did have, he put bags on some dozen different varieties in order to shut the bees out. A small slit was cut in the bottom of each sack to permit the escape of any water that might gain admittance. In all, there were upward of a thousand sacks put on the grapes. The result was tabulated, and Mr. Taylor, in the *Review*, concludes in this way:

In the case of the three kinds much injured, it became constantly more evident that the damage to those in bags was greater than to those to which the bees had access. This was especially true of the Dutchess and the Delaware. So evident was it that the reason of this lay in the fact that the juice oozing from cracked grapes in the bags was communicated to neighboring grapes causing incipient decay, a weakness of skin and cracking where otherwise cracking would not have occurred, that, by the middle of the month, I hastened to remove the bags from these varieties that the bees might gather the juice from the broken grapes.

To my mind the conclusion is inevitable, that not only do bees not injure grapes, but that by gathering the juices of cracked ones they prevent decay and thereby the destruction of sound ones.

SHAPE AND WEIGHT OF SECTIONS; TALL VS. THE SQUARE SECTIONS.

In the last *Bee-keepers' Review* there is an editorial under this heading. Mr. Hutchinson, during the past fall, has attended the fairs of several different States. He has met grocers and commission men, and has found that, almost without exception, the light-weight section had the preference. Much to his surprise the goods were almost invariably sold by the piece. While this was true, they were bought by the dealer by weight. It therefore followed that a thin section looked just as large as the old pound section; and being sold by the piece it netted the retailer a little more profit; that thin sections, or, rather, thin combs, were more quickly drawn out, filled, and sealed over.

In referring to the tall sections that have been receiving some prominence of late he says:

It may not be worth while to change the shape of our sections, but, under present conditions, a section an inch and a half in thickness, about three and a half inches wide and about five inches in height, used without separators, would be the one that would bring the most money. With separators, the width ought to be one and three-fourths, or seven-to-the-foot.

Then, there is the question of right and wrong. The whole thing is in line with the making of bottles with the sunken sides and raised bottoms, the bottles being used in selling flavoring-extracts, medicines, etc.; the making of berry-boxes with raised bottoms; the putting of the largest berries on top; "facing" barrels of apples with the best apples; putting the sections in a case next the glass etc. In short, it is putting the best side out.

The use of thin sections of *standard* size may be in a line with the making of bottles with sunken sides, but it is not altogether so, I am sure. The factor hinted at by Mr. Hutchinson, to the effect that a thin comb would be drawn out and filled quicker, has, I am sure, a great

deal to do with it. For this reason, if for no other, the producer, in many cases, prefers the thin combs.

As to the tall sections (taller than broad), it does not seem to me that we can hardly conclude that it is in line with bottles with sunken sides. Those that Mr. Danzenbaker has been selling, while 1½ inches thick, hold very nearly a pound; and he contemplated making a section just enough thicker to make it hold an even pound. In any case, it would be just as legitimate to sell the 1½-lb. tall section as it was the old square section 1⅝, because they both weigh the same. It is not, then, because the tall sections *appear* to contain more honey, although that may have something to do with it, but because any thing taller than broad meets better with our ideas of taste. As I have said before, window-panes taller than broad look far better than square. For the same reason we have long panels in doors; and the doors themselves are taller than broad. Business-blocks of the same proportions look better than when both dimensions are the same. Even the oblong printed page that we are now reading is more in accordance with the accepted taste than one square. Capt. J. E. Hetherington, that shrewd bee-keeper—one whose colonies are numbered by the thousand, and the most extensive bee-keeper in the world, probably—finds there is a better market for the tall section in the East; but this might not be true of all localities.

Now, I am not arguing that we should change from a square to an oblong section; but I simply desire to give the latter due credit. The supply-dealers can make one section as cheap as another; but the rub is going to be that bee-keepers who are using regular standard L. hives will not find it so convenient for tall as for square sections. This is, in fact, the most serious objection of all. It may be so serious, indeed, as to bar out its use to any very great extent.

HONEY CARAMELS, ETC.

Charles McCulloch & Co., of Albany, N. Y., one of the squarest and cleanest commission firms who handle honey, have sent us two recipes in which honey is used, which they think will prove useful to our readers. Here they are:

HONEY CARAMELS.

These are made by cooking to "soft crack" two pounds of coffee A sugar, two pounds of clear extracted honey, and two pounds of glucose.

HONEY GINGERCAKE.

Rub three-quarters of a pound of butter into a pound of sifted flour; add a teacupful of brown sugar, two tablespoonfuls each of ground ginger and caraway seed. Beat five eggs, and stir in the mixture, alternately, with a pint of extracted honey. Beat all together until very light. Turn into a shallow square pan, and set in a moderate oven to bake for one hour. When done, let cool and cut into squares.

Bee-keepers hate the very suggestion of glucose, so I think they will be inclined to put in more honey and leave out glucose entirely in the first-mentioned recipe. If glucose is an ingredient essential to the good quality of the caramels, it will be the first instance that I have ever known where that article was of any use.

When Dr. Miller prepares his list of honey-recipes, I hope he will take these into consideration. In the mean time I know he will appreciate it greatly if our lady readers will report on the various recipes that have been given in our columns of late. We intend to put into the honey-leaflet only those that have been tested, and which are known to be first class.

ARTIFICIAL HONEY-COMB; THE PRODUCT MADE BY OTTO SCHULZ, OF BUCKOW, GERMANY.

On pages 458, 538, and 783 I spoke of the great advantage that would accrue from the use of drawn comb in sections, and it will be remembered that I spoke of the experiments of B. Taylor and others. Later on, Samuel Simmins (see p. 779) and M. M. Baldridge showed that they had been using drawn comb in sections for years, and were satisfied that there was a great gain in the use of it. Seeing the interest taken by myself and others in this subject, Edward Bertrand, editor of the *Revue Internationale*, of Nyon, Switzerland, sent us a sample of the full-depth artificial comb manufactured by Mr. Schulz, as above. I had previously seen this comb; but it was so heavy and clumsy I doubted whether it would ever be a commercial success; but since that time I understand it is being sold in Germany; but just how much of it I do not know.

Well, let us take the piece in hand and examine it carefully. The sample is 2x2¼ inches, and one inch thick, and weighs ½ ounce, or just one foot to the pound. The cell-walls are $\frac{22}{1000}$ inch thick—that is, a trifle over $\frac{1}{50}$. The base is considerably thicker.

Let us now compare this with natural comb. The thickness of cell-wall varies from $\frac{2}{1000}$ to $\frac{4}{1000}$ of an inch. The base is a trifle more. These measurements make natural comb about 6 feet to the pound. The ordinary heavy brood is, on an average, about 5 feet; light brood, 7 to 8 feet, and thin foundation 10 to 11. It will be seen, then, by a comparison of these figures, that the Otto Schulz foundation, besides being clumsy, would be very expensive. It has six times as much wax in it as the natural comb, and anywhere from 3 to 4 times as much as comb built from foundation; and as these measurements were made with a very delicate micrometer I do not think there can be any mistake. If, then, I am correct as to the proportions, no bee-keeper of this country could afford to use such comb providing he expected to compete with other bee-keepers who use natural comb or that built from foundation.

A careful examination shows that the comb was cast from a mold. This would preclude the possibility of making the article any lighter; for, even as heavy and clumsy as it is, it is very fragile. Cast wax is much more brittle than the drawn. If, then, the Schulz comb were made lighter it would not stand transportation. From a commercial and practical standpoint, both the method of making and the product itself must be regarded as a failure.

But from a scientific standpoint this comb is very interesting, because we are told it is accepted by the bees. It demonstrates that they are not particular how thick the cell-walls are. All that they require is that the cells themselves shall be large enough to accommodate the rearing of brood. In fact, we are told that wooden comb—that is, a board perforated with holes of the right size, has been used successfully by Mr. Aspinwall, of Michigan, in the rearing of brood.

In earlier times Capt. Hetherington, I believe, made a metallic wax-covered comb. This was also accepted by the bees for purposes of brood-rearing. All this goes to show that bees will accept almost any thing, providing that the cells are of the right size; but if we are ever to have an artificial comb that will compete with foundation, it *must* be sold at a price not very much in excess of that article, per square foot.

LAWRENCE BRUNER.

I HAVE before spoken of the lecture delivered by Prof. Lawrence Bruner before the North American convention at Lincoln, on the subject of "Wild Bees of Nebraska." I believe it is safe to say that bee-keepers never listened to a more interesting and scientific talk on the subject of bees. Prof. Bruner is one of the rising young men of the country, and one who is both able and willing to give bee-keepers material assistance in his department. Feeling that our readers ought to be a little better acquainted with him, I take pleasure in giving the following biographical sketch which I have secured.—

Lawrence Bruner, the subject of this sketch, was born in Catasauqua, Pa., March 2, 1856. In May of the same year his parents came west, and settled in Omaha. Later they went on a farm, where they remained till 1870, when they moved to West Point, Nebraska.

As a small boy on the farm, Mr. Bruner made the acquaintance of birds, insects, and plants, in all of which he took a great and peculiar interest. From early childhood he collected all sorts of natural-history specimens, but more especially insects. However, it was not until the age of fifteen that he began his systematic collection of the several orders of insects.

He entered the University of Nebraska when it first opened, in the fall of 1871. On account of ill health he was not able to continue his studies till his graduation. However, his spare time at home was spent in his favorite study, that of the nature and life-habits of insects. The region in which he lived was especially favorable to such investigation, and so the successes of his researches led him to further study. He also, at this time, did considerable taxidermy work, thereby learning a great deal about birds and other animals.

In the summer of 1878 Mr. Bruner had the good fortune to accompany a friend and his two sons on a trip to Idaho—a trip taken for the especial purpose of studying nature. While in Utah he became acquainted with a member of the U. S. Entomological Commission. Two years later, through this friendship, he was made entomological assistant. His residence was now at Washington, D. C. In the course of two of three years he was given charge of the grasshopper or destructive-locust investigation for the entire United States. While in this work Mr. Bruner made several extended trips into British America, through various parts of the Rocky Mountain region, in the Southwest, and other places. He took a trip to Mexico, also, for the express purpose of studying insects destructive to the orange industry, and was successful in learning the life-histories of several important species.

PROF. LAWRENCE BRUNER.

In April, 1888, Mr. Bruner was called to the University of Nebraska as experiment-station entomologist, and instructor in entomology. He retained at the same time, however, his connection with the U. S. Department of Agriculture as field agent.

During all this time Mr. Bruner had continued his study and collection of birds and insects. His private collection of North American orthoptera is probably the largest extant.

Mr. Bruner is, at present, professor of entomology, ornithology, and taxidermy, in the University of Nebraska; and under the university-extension work he delivers lectures throughout the State, from time to time, on practical entomology.

Prof. Bruner has written some careful and helpful works on his particular subject: Birds of Nebraska; Tree-claim Insects; Insect Enemies of Indian Corn; Insect Enemies of the Grapevine; Introduction to the study of Entomology. Besides these papers he has contributed various articles to scientific journals and societies.

One may travel and keep his thoughts to himself, or he can be sociable and form many pleasant acquaintances. To confess the truth, it is a little hard for me to make advances among entire strangers; but I have so often been rewarded for so doing that I ought to profit by past experience. As we neared New Orleans the man in the berth above got down and sat beside me. Somehow I got the impression from his looks that he and I had no ideas in common, and that it would be of no use to get acquainted. I will not tell you what other thoughts Satan suggested; but a better spirit finally prevailed, and I said something, just because I felt a Christian *ought* to say something. What do you think? Why, it turned out he was a prominent business man in an Ohio city, and not only a temperance business man, but a supporter of the Anti-saloon League of Ohio. He needed just the encouragement I could give for him to continue his support to the cause; and as we separated he remarked that it had given him much pleasure to make the acquaintance of one whom he had known before only by reputation. Suppose I had listened to Satan!

After he left, as the car was crowded a young lady was placed in the seat opposite. Now, although I am, as a rule, favorably inclined toward young ladies, Satan whispered that I "had better keep my mouth shut." After we had sat facing each other for some time in silence the better spirit suggested I should at least give her an opportunity to talk. She proved to be a teacher in Southern Louisiana, and very soon we were chatting as old friends that had just met. After a little urging she consented to share my lunch, and so we breakfasted together. I gave her the last GLEANINGS containing the story of the Idaho schoolma'am; and when we bade each other adieu it was in truth a parting with a friend and comrade in the battle for truth. Dear friends, what woul be the result to the world if the men and women "who love righteousness" could clasp hands oftener in this never-ending battle against iniquity? Who does not feel more courage after these brief acquaintances that give us glimpses of another comrade in the field?

There are, it is true, "ships that pass each other in the night;" but it is also true there are many that need *not* pass in the night (or day time either) without a friendly hail; and this hail need not delay either, but, on the contrary, help both of them along on life's voyage.

At New Orleans I was met at the depot by our good friend J. W. Winder, who very kindly pointed out the improvements made since my visit four years ago. Electric cars now take the place of the horses and mules; and from the amount of business they are doing it is hard to imagine how New Orleans could do without them. The cars follow each other so closely on the busy streets that you can find the car you want almost always in sight. The Louisiana State Lottery, that was so prominent everywhere four years ago, is now gone out of *sight* (at least), and, we trust, for ever. Of course, other things in the line of gambling are still there, but we hope for more triumphs.

Friend Winder has about 200 colonies of bees in one yard about three miles out of the city. His yield of honey during the past season was from 20 to 25 lbs. per colony. I think it would have been larger if the number were divided and placed in two or more localities. He thinks not enough more, however, to pay for the extra expense. His honey, rather dark in color, brings about 50 cts. per gallon, and thus competes with best New Orleans syrup. He says there is a great quantity of glucosed honey sold in the city. The mixers want a dark honey of very strong flavor for this purpose. The glucose makes it white enough, and tones down the strong flavor. Nothing has been done in this State, so far as he knows, to punish or restrain adulteration. Friend W. keeps pure honey at different points all over the city; but the mixed is cheaper, and so sales of the genuine are slow.

Dec. 4th.—We found ice on the water beside the track almost to Houston, Tex., early this morning, but it is now quite warm in the middle of the day.

We just passed a train loaded with huge iron tanks, labeled "Southern Cotton-seed Oil." If this is sold under its true name, I presume it is all right, whether used for food or for other purposes.

Between Houston and San Antonio we pass vast fields of both cotton and sugar-cane; and the smoke pouring forth from the great sugar-mills looks like business indeed. The vast expanse of prairie, where one can see quite distinctly 20 miles or more, will always move me with a feeling of inspiration, I presume, no matter how many times I see it. A friend who often sits near my elbow when we work together at home has called the "book of Nature" one that makes no mistakes, and always tells the same story. I wish he were with me now. He would find the leaves of the book here surely broad enough.* Our 13-year-old boy Huber has a fashion of eating his meals with an open book before him, reading while he eats. Well, that is just what I have been doing; but my open book is out of the open car window.

DOORYARD DECORATION.

At almost all the stations along the Southern Pacific we found some very attractive work in the way of decorating the yard with white stones. These stones are arranged so as to mark out the paths and flower-beds; and at some places stars, circles, and crosses are artistically arranged with rows of stones. When white stones can not not be had, get cobble-stones and dip them in whitewash. They can be readily seen after night, so as to keep people off your plants.

Some one has spoken of the present "epidemic of crime." This morning some one got into our car and stole the whole of the tickets belonging to the passengers while they were in possession of the conductor of the sleeper. The thief then threw them off the train, calculating to get them or have a confederate do so; but some one found them, carried them to the nearest station, and wired ahead. As it is, I expect to find my ticket waiting for me at San Antonio after I have finished my visit at the Atchleys.

Later.—New tickets were made out for us by the railroad company on our arrival at San Antonio.

San Antonio.—As the train was late, I did not get here until night, and I began to have that same feeling I have so often in traveling, "a stranger in a strange land." For a time I rambled about and began to feel homesick just because I didn't *know anybody*. I stepped into a bicycle store and arranged for a wheel in the morning, as my train for Beeville didn't leave

*I have heard him say that sometimes he felt like shaking hands with every weed (even the humblest) he met. Out here on the prairies he would find a big job of "hand-shaking."

until afternoon. The gentlemanly proprietor dropped his business to tell me about an old acquaintance I wanted to find, called him up through the "phone," then took me out for a ride on a new "Companion" bicycle. This machine, while it has only two wheels, carries two people side by side in just the nicest way for a "visit," and *one* of them need have no skill or practice at all. Mr. W. E. Roach, the owner, finally took a man weighing over 200, who had never been on a wheel, and took him around as nicely as could be. I really believe this arrangement is going to open a new era in cycling.

Dec. 5.—I have just ridden several miles on the new wheel, and tested it over quite rough roads, and it is all its name implies, and all that is claimed for it. Friend R. contemplates using it to show travelers over the city. He does quite an extensive business renting wheels: and with the new one a guide could go along and give lessons in wheel-riding, and at the same time show all the points of interest. For circular in regard to the wheel, address W. E. Roach, 307 W. Commerce St., San Antonio, Tex.

Our wheelride was to a beautiful spring a little out of the city. The water is beautifully clear and pure as it gushes forth into several circular rocky basins. Speckled trout, bass, and other handsome fish dart in and out of the rocky crevices. As no fishing is allowed, they are very tame. A water-plant, with bright-green round leaves, grows in the bottom. The water seemed quite warm, but it was a very cool morning. My friend says that, in a hot summer day, it seemed very cool and nice to drink.

San Antonio has numerous artesian wells, and, in fact, the city is supplied from these. Some of them are hot enough to supply the city baths. One well, when first drilled, sent a 10-inch column of water 30 feet high. It was brought under control, and now fills the city mains with water under pressure, soft enough for washing, drinking, etc. By the way, I forgot to mention that in New Orleans they have numerous artesian wells also. I wonder if the various towns and cities that find these precious stores of pure water, without even the need of pumping it up, always remember to "praise God from whom all blessings flow."

Mr. D Ainsworth (a Medina boy years ago) overtook us on our wheelride, and I took a seat in his buggy, leaving my good friend R. to run his double wheel home alone. San Antonio has one of the finest military posts in the way of grounds and buildings in the United States. The establishment is on a beautiful rise of ground, and we were so fortunate as to be present during the artillery and cavalry drill. I kept wishing Mrs. Root could be present, as she is always so much in love with fine trained horses. As they bounded over the beautiful grounds, accompanied, in response to the bugle call, with other military music, it made one think of the carnage of battle. May God forbid that either men, horses, or *cannon* should ever be needed for such work again. I don't know but that I have fallen in love with San Antonio and its 40,000 to 50,000 people just a little.

The only farming crop in this region is cotton. This they grow, and depend upon buying every thing else. Near the cities there are truck-gardens that depend on irrigation; but cotton needs no irrigating, and so in the country there are no gardens, or almost none.

Dec. 7.—I reached the Atchley plantation Saturday night, just at dark. I call it plantation, for no other word seems to describe it. Three years ago they located here, 2½ miles out in the country, that they might have room for their apiaries, and also that their family of children (*nine* at the present time) might be brought up away from the dangers of the town. As ground room is cheap, their buildings are all one story; and in order to have plenty of room and abundance of ventilation on all sides, their home building extends out pretty long, and the rooms are all separated by broad porches or covered passageways. In these warm climates the cooking-stove is kept well away from the dining and all other rooms. The buildings are all new and well finished; in fact, it is hard to understand how they have been able to do so much in just three years, even if there *are* nine of them, children and all.

Bees are everywhere. A log "bee-gum" stands by the porch, another hive on the porch; bee-hives all through the front and back yard; and as I write I am cheered by the hum of busy workers going out and in a hive that has stood for months close beside the office door, the bees going in and out through the open door. Now, this door is a busy thoroughfare all day long; but the bees watch their chances and dodge between your feet, sometimes a yellow shower of them waiting for people to get out of their way; and then the joyous hum as they gain the entrance! Why, it sent me back to years ago when I spent hours studying and listening beside an observatory hive. These bees never sting; they have become so accustomed to the business of the office that they take it as a matter of course. Tell me that bees can't be tamed! Why, I could sit here for hours and enjoy watching them.

Now, friends, here is a plan for a house-apiary: Make a little building, say 12x14 feet, and have a door at each end. Set 6 hives on each side, right on the floor. Open the doors every morning when it is warm enough, and close them every night. Don't have any windows, and you have your house-apiary complete.

This hive I am speaking of was started by accident with only a handful of bees. They came through the frosty and cool nights all right, because there is a little fire in the office almost every day, and they are now gathering honey when almost all the strong colonies outside are idle because the morning is too cool. The gentle heat from the fireplace near them sends them out at the open door an hour or two before the rest.

Here I am talking about this one hive of bees when I have not shown you round outdoors at all. Well, right out by the road is the hive-factory. It was after dark Saturday night before the whistle blew for shutting down. The Atchleys have discovered the advantage of filling orders promptly, even if it does require getting up before daylight and working after dark. Of course, the factory is not very extensive, but every thing is neat and in order. The arrangement of their building facilitates this. The office where I sit writing is far enough away so as to be safe from fire if the factory burns. The printing-office is also a separate building. A shaft carries power from the factory. The latter is not insured, because it can not be done down here for less than *ten per cent.*

Mrs. Jennie Atchley, who now sits by my side writing, is a very hard-working woman. I have been pleading for a little vacation for her. She not only raises queens, but she goes into the factory and makes the queen-cages herself. In building their house she sawed off the boards and nailed them on, doing a large part of the inside finish. When we consider that at the same time she looks after *nine* children, the youngest (Jennie Bee) only 14 months old, we can realize something what this woman has done. Mr. Atchley himself is the *scholar* of the family. All correspondence, and all that is

written for publication, is expected to be revised by himself. In fact, since he has had the typewriter the most of it has been re-written by himself.

In GLEANINGS for Oct. 1, 1893, will be found an excellent picture of the Atchley family; and in the issue for Aug. 1, 1893, will be found a picture and sketch of Willie Atchley. Miss Amanda, the eldest, is her mother's "right hand," and it is she who makes the candy for the queen-cages that carries queens so successfully all over the world.

HOW TO SAVE ALIVE THE ORPHAN CHILDREN OF MARTYRS IN ARMENIA.

[We take pleasure in giving below a few extracts from a tract which is being published by the National Armenian Relief Co., having its headquarters in Bible House, New York.

The tract sets forth the need of the thousands of Armenian children left by the Turkish massacres in utter destitution, and proposes a plan for their rescue, not only from present extreme distress, but also from Turkish Mohammedanism in the future.

In our first number this year we published an appeal for the Armenians in general, which was generously responded to, and over $100 was forwarded; but the exigencies of the case demand continued effort; and especially this plan to save the lives of the children, I am sure, will appeal to the hearts of all our readers, and they will be glad of an opportunity to make some sacrifice in its aid.

It may be that the Powers will soon put a stop to this awful carnage; but in the mean time the sufferers must have help. Just read these facts.—ED.]

THE SITUATION.

It is now more than two years since the massacre of peaceable, industrious Armenian Christians in Turkey began. A region 500 miles long, and 300 wide (large as New England, New York, and Pennsylvania), with hundreds of villages and cities, has been given over to murder, rape, and robbery. The survivors, 300,000, largely women and children, are utterly impoverished.

One of the saddest results of the massacres in Armenia is the helplessness of thousands of orphan children, some of whom have lost both parents by death.

Miss Clara Barton's official statement says: "Without outside support, at least 50,000 of these persons will have died of starvation, or perished through accumulated hardship, before the first of May, 1897."

[From the letters of missionaries on the field, we gather the following:—ED.]

Our relief so far has been simply to keep the people alive; and how near the brink of starvation they have come you can judge from a village which I visited to-day. It was formerly a village of about 150 houses. Perhaps 15 remained. In some houses there was a little bread. In all there were little bundles of grass, which is now their principal food. The faces of the women and children are emaciated and yellow. I asked one little boy if he had eaten bread that day, and he replied "No;" he had eaten only grass. When we sat down on the ground, surrounded by most of the villagers, some of the children were all of the time pulling up grass, and eating it, roots and all. So far as I can judge, there are only a few days between the people and starvation. The people meet us with a look of pleading, and ask, "Is there no hope for us?" I pass the question on to you.

My heart is sick and faint with the pressure of want and misery which we can not relieve.

Two or three cents daily will feed one person, while one dollar will go a long way toward clothing an individual or furnishing the winter's fuel for a family.

Moreover, the establishment of orphanages under missionary supervision would utilize our large mission plant and put our work on a footing difficult of attack by either Turk or Russian.

It is not necessary to construct, at large expense, orphanages into which children can be gathered in great numbers, and which might obtain the opposition of the government. All through the stricken districts there are yet standing a large number of houses belonging to native Christians, which, if properly systematized and arranged, will easily accommodate from ten or fifteen to forty or fifty orphans; these houses could be secured.

For additional help, if necessary, the land is full of Christian widows who would gladly give their services night and day living with the children in return for a safe home.

We know full well from the past that the Turks will make every endeavor to bring these children into their homes, in order to secure them for the future. It is very apparent that the Lord is opening the way for immediate missionary effort along the line of protection for the orphans of that country. The general evangelistic work has been hampered; many of the schools are broken up; but here is a work, broader than any thing which the missionaries have engaged in hitherto, lying ready to be taken up.

In view of the fact that the Turkish Government will not allow the orphans to be removed, provision must be made for them where they are.

Orphanage shelters can be located, as needed, at the twenty distributing centers, where the work of relief is now being carried on by American missionaries, with the co-operation and help of British consuls.

Money given in connection with the orphanage-shelter scheme will not be used for the erection of buildings, but for providing food, clothing, care, and temporary shelter for orphans and destitute children.

The expense of living varies in different parts of the country; but one dollar a month will, on the average, provide the bare necessities of life.

$12 will provide the support of one orphan for one year.

$120 will provide the support of ten children for one year.

$1200 will provide the support of 100 orphans for one year.

The supporting of orphans will mean in many instances the relieving of widows as well, as in many villages five or ten orphans may be entrusted to the care of a Christian widow, who by this means will earn her own livelihood.

HOW CAN THE NEEDED AMOUNT BE SECURED?

There are persons of wealth who may be willing to assume the support of the orphanage shelters of one center at a cost of $12,000.

Various organizations, such as Young People's Societies of Christian Endeavor, Women's clubs, King's Daughters' circles, Woman's Christian Temperance Unions, Young Men's Christian Associations, might each undertake, by subdivision of the work, to secure through its members the support of the orphanage shelters at one center, each local society undertaking the support of one or more orphans.

The sum required could be raised through the coming year, and paid month by month, in installments.

[CHRISTMAS GIFTS.]

If Christians whose hearts are touched by the story of this need would *this year* refrain from giving *Christmas gifts* to all (or all but a very few) of their friends, and give the money thus saved a birthday gift to Him whose birth they celebrate, to be used for the relief of the starving children in Armenia, *tens of thousands of orphans* would by this means be saved alive, and the givers would win the approval of Him who has said, "Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me."

The missionaries being surrounded, as they are, by thousands of homeless, helpless, starving people, can not endure the sight of such suffering unless they have means on hand to give some measure of relief.

How can they stay at their posts to mock, by their presence, these suffering people? Their courage and health will give way, and, with breaking hearts, one by one, they will be forced to leave their own and return to this country. The Turks will then have the Armenians, in those places, in their power, and their triumph will be complete. If

the light of the gospel is thus allowed to go out in these centers, what hope will there be for the evangelization of the ten millions of Mohammedans in that land?

By raising a speedy relief fund we can avert this unspeakable disaster, sustain the courage of the workers, save alive and protect the children of that country, who are the hope of Armenia; and relief, furnished in the form we have suggested, will mean not only preservation of human life under decent conditions, but the molding of character for all time.

WHERE TO SEND MONEY.

Send all orphan funds marked "Relief for the Armenians," to Brown Bros. & Co., Bankers, 59 Wall Street, New York, who will return receipt. They are the authorized treasurers of The National Armenian Relief Committee.

Money intended to reach and benefit the Armenian sufferers should in no case be handed to Armenians or others who claim to be lecturing "for the cause," but should be sent direct to the proper authorized treasurers. This caution to the benevolent but unsuspecting public is made necessary by numerous complaints already received, and applies to money intended for the general relief work as well as to orphan funds.

HOW TO GET LITERATURE.

Literature for use of speakers, leaflets of various kinds for distribution, collecting cards and dollar wheels, may be had in any quantity free of charge from Rev. F. D. Greene, General Secretary, 63 Bible House, New York.

For further information regarding the scheme for the relief of orphans, write to the Misses Mary and Margaret W. Leitch, 120 Bible House, New York.

Remember to send your funds to Brown Bros. & Co., bankers, 59 Wall St., New York City.

TEMPERANCE MATTERS.

In the daily papers for Nov. 23 mention was made of a terrible fight in Cleveland, which lasted half an hour, in spite of any thing the police could do to stop it. The origin seemed to be that one man, in going down hill hurriedly, ran against another man going hurriedly *up* hill. Instead of apologies, as we might expect, both men began cursing each other. Blows followed curses, then one whipped out a knife, and a by-stander interfered to prevent danger from the use of the knife. Then others took sides until thirty or forty were fighting. The papers state that many entered into the affray without knowing the cause of it, or the side on which they were fighting. When the police had massed together in sufficient numbers to stop the knifing and pounding, two or more men were so badly hurt that they will die, and a dozen or more are more or less hurt. At the close of the scene a great burly man of some foreign race was swinging a tremendous club, and mowing down friends and foes indiscriminately. The first account of it gave no reason further than the above; and I fell to wondering. "Has Satan really broken loose according to Bible prophecy, or is it because we have so many ignorant and unprincipled people massed together in our large cities?" For 24 hours I said to myself, again and again, "Can it be possible that we have people in these United States of ours who would get into a quarrel, and use knives in this way, for a whole half-hour, with no other provocation or cause than the trifling every-day occurrence of one man running against another?" Then I began to fear more terrible things were threatening us as a nation just now than even the most fearful were aware of. When the daily paper of Nov. 24 was thrown on our porch, however, I understood all about it, and the matter seemed plain and clear. Here is what my eye struck upon:

The principal cause of the riot was the fact that the unruly part of the population of Franklin Avenue Hill consumed several kegs of beer Sunday afternoon, and also copious quantities of other stronger intoxicants. They were therefore in fighting trim by Sunday evening.

I drew a long breath of relief—not because I felt any better in *one* sense of the word, but because there was a plain, clear *explanation* of this before-seeming wonder Now, this murderous riot did not occur because the inhabitants of that locality were Hungarians, Slavs, Polacks, or Irish, or any thing of that kind. It came about because they were permitted to drink themselves *crazy* during the whole afternoon of God's holy day. No wonder they fought with each other, and did not know friends from foes. Why, the same thing might be expected to happen in our town, or in any other place in the United States where we could find a crowd of people with the disposition to drink, and a state of morals that would permit them to drink unhindered.

In the first report, occupying the greater part of a column, not a word was said about intoxicants. I read the whole over repeatedly to see if this was not at the bottom of the mischief. Either the reporter did not know of it at the time, or else he did not seem to think that the fact that quite a crowd had been drinking beer all the afternoon had any thing to do with the terrible carnage.

THE ORIGIN OF MAULE'S THOROUGHBRED POTATO; SOMETHING FROM MR. W. H. MAULE HIMSELF.

Mr. Root:—In answer to your request as to some data in regard to the origin of Maule's Early Thoroughbred potato, I take pleasure in giving you the following information:

The origin of this potato dates back to 1884, when a seed-ball was picked in a field of so-called Pedigreed Early Rose. The seeds obtained from this one seed-ball were planted in the spring of 1885, and all those that promised well were sorted out in the fall and planted in the spring of 1886, and again selected in the fall of 1886. There were then seven promising types, which were guarded carefully, and all planted in the spring of 1887, side by side, all under the same treatment and conditions. Among them was found one that, in growth of tops, was entirely distinct, being smaller than any of the rest, and in general appearance resembling the Queen in growth of top, and appearing not at all likely to produce a good yield of potatoes. We were surprised, however, on digging them, to find that they outyielded all the rest, having tubers of the Early Rose color with somewhat of a purplish tinge, many of which showed a tendency to resemble Early Ohio in shape. It was right here that the idea of a valuable find in the way of an improved Rose potato suggested itself. If we could produce a Rose potato, similar in shape to Early Ohio, with small tops, that would enable the planter to plant rows much closer than ordinary varieties, and in addition prove itself a good yielder, we should have without a doubt an ideal heavy-cropping early rose-colored potato to take the place of the old Early Rose, which does not begin to yield a sufficient number of bushels of potatoes per acre for profit.

The next six years were spent in developing the Early Ohio; and as the type developed, so did the yield; and in the fall of 1894 we dug 20 bushels and 17 lbs. of what we consider the best all-around early potato ever introduced. I offered to my customers in 1896 the product of these 20 bushels and 17 lbs. of potatoes under the name of Maule's Early Thoroughbred; and any one who claims to have had this same potato to offer in 1896, and did not procure them from me, did not have Maule's Early Thoroughbred.

As you are probably aware, another seedsman

offered a potato last year under the name of Thoroughbred, which he had a perfect right to do if he wished; but they were not Maule's, as was proven by more than a dozen tests in different parts of the country, as the Western Thoroughbred had larger tops, and of a more whitish color, besides being a longer variety.

I might also add that, notwithstanding the demoralized condition of the potato market last spring, and the fact that, owing to the limited supply, I had to offer the potatoes at a very high price, the demand was something unprecedented, as I sold every potato I had on hand.

I might also add that, last spring, after our catalog was out, Mr. J. W. Baker, of Tiskilwa, Ill., wrote us in regard to Thoroughbreds, stating that some years previous he had sent us a potato for trial under the name of Thoroughbred. On looking into the matter we found Mr. Baker had sent us a potato for trial he called Thoroughbred; but Mr. Baker's potato had nothing whatever to do with Maule's Early Thoroughbred; and had we remembered, when we named Thoroughbred last fall, that a potato had been sent us for trial under this name, we would never have named our new potato Thoroughbred. This was the one unfortunate incident in the naming of the Thoroughbred; but as we did not hear from Mr. Baker until long after our catalog was out, we could, of course, do nothing then in regard to changing the name. So far as we know, Mr. Baker's potato has never been introduced.

Philadelphia, Pa., Nov. 27. WM. HENRY MAULE.

As there had been several queries in regard to where Maule got this new potato, not only last year but this, I have thought best to give you the above for publication, and I hope it will settle the matter.

We clip the following from the *Rural New-Yorker:*

THE BEST STIMULANT.

The bicycle could not have made its appearance at a more opportune moment, says Susan S. Fessenden, in the *Ladies' World.* Every thing that tends to produce more healthful bodies will create more normal desires and appetites, and reduce abnormal craving for stimulants. What temptation to resort to artificial stimulus has the person who can enjoy the inspiration of a ride through the bracing air, filling the lungs, setting the blood to coursing through the veins, giving life a charm that discounts the devitalizing narcotics and debauching stimulants? In this new mechanical friend, the rising generation has, in some degree, an offset to the depraved hereditary cravings and weakened will power engendered by a generation of smokers and drinkers. Let us rejoice over each one of the hundreds of thousands of bicycles that find purchasers every year.

EARLY-ORDER DISCOUNT.

After this month the early-order discount, which has been customary for some years past, will be discontinued. The discount for the remainder of this month will be 4 per cent. This will not apply to sections nor to foundation at the new scale of prices published herewith, nor to honey-packages, but to hives and other bee-keepers' supplies for next season's use. This notice applies to dealers as well as to consumers.

REVISED PRICES ON WEED NEW-PROCESS FOUNDATION.

For next season we have adopted a new scale of prices on comb foundation, making less difference in price between the different grades. The revised retail price list is as follows:

Grade.	Size in inches.	No. sheets in 1 lb.	Price in lots of 1 lb.	10 lbs.	25 lbs.	50 lbs.
Medium brood,	7¾x16⅞	6	45	43	41	40
Light brood,	7¾x16⅞	8	47	45	43	42
Thin surplus,	3⅞x15½	26	52	50	48	47
Ex. thin "	3⅞x15½	30	55	53	51	50

The above are regular L. sizes. Other sizes made to order. Larger quantities and prices to dealers quoted on application.

ADVANCED PRICES ON SECTIONS.

We have adopted the following prices on section honey-boxes for 1897, taking effect at once:

Less than 250, ½c each; 250 for $1.00.
500, $1.75; 1000, $3.50.
2000 at $3.25; 3000 at $3.00.

Larger quantities quoted on application.

No early-order discounts allowed.

No. 2 sections, 50c per 1000 less than No. 1.

Four-piece dovetailed or nailed sections, 50c per 1000 extra over one-piece.

One-piece sections, other than 4¼x4¼, 10c per 1000 extra for each additional inch or fraction thereof by which they exceed in size the 4¼, measuring full length before folding, and 50c on each lot for setting machinery.

We rather overshot the mark in low prices the past season, and do not care longer to do business for glory, without any profit. The high standard of excellence demanded in this line of goods can not be maintained at the prices which have ruled the past season, without loss to the manufacturer. We therefore return to more remunerative prices.

HONEY FOR SALE.

We have engaged about all the honey we can handle for some time, unless there are some desirable lots of fancy comb or choice extracted honey to be had in exchange for supplies.

We offer last year's alfalfa honey in 1-gal. cans, 6 to the case, at $4.75 per case; lots of two cases or more at $4.50; 5-gal. cans, 2 in a case, at $7.50 per case. We have only a few cases of each left, and, of course, can not duplicate these prices when this is gone. Choice basswood or willow-herb honey in 60-lb. cans, 2 in case, at 7½c per lb.; 2-case lots at 7c.

Buckwheat honey in 60-lb. cans, 2 in a case, at 5c per lb.; 2 case lots or more at 4½c, f. o. b. shipping-point in New York where produced. Buckwheat comb honey by the crate of 150 to 200 lbs. at 9c per lb., f. o. b. New York shipping-point. Choice white comb honey, direct from Michigan points, at 13c in crate lots of 150 to 200 lbs. No. 1 white at 12c; amber at 11c. If in need of honey, write us and we will quote on such grades and quantities as you name.

WIRE NAILS LOWER.

There has been a change in the scale of prices on wire nails, a new card having been adopted by the manufacturers Dec. 1. With the collapse of the nail trust, much lower prices are ruling. Our revised table of prices on standard wire nails, cement-coated, is as follows:

Style.	Length.	Wire, Gauge.	No. Nails in 1 lb.	Price of— 1	10	Keg.
2*d* fine.	1 in.	No. 17	1440	8	60	$4.00
3*d* "	1⅛ "	" 16	1000	7	55	3.70
4*d* box.	1½ "	" 15½	550	7	50	3.50
5*d* "	1¾ "	" 14½	366	7	50	3.50
6*d* "	2 "	" 13	250	6	50	3.35
7*d* "	2¼ "	" 13	236	6	50	3.35
8*d* "	2½ "	" 12	157	5	45	3.25
9*d* "	2¾ "	" 12	130	5	45	3.25
10*d* "	3 "	" 11	107	5	45	3.15
4*d* casing.	1½ "	" 15	550	7	50	3.50
6*d* "	2 "	" 13	250	6	50	3.35
8*d* "	2½ "	" 12	157	5	45	3.25
3*d* common.	1¼ "	" 15	615	6	50	3.45
4*d* "	1½ "	" 13	322	6	50	3.30
5*d* "	1¾ "	" 12½	254	6	50	3.30
6*d* "	2 "	" 12	200	5	45	3.20
7*d* "	2¼ "	" 11½	154	5	45	3.20
8*d* "	2½ "	" 10½	106	5	45	3.10
10*d* "	3 "	" 9½	74	5	40	3.05
16*d* "	3½ "	" 8	46	5	40	3.05
20*d* "	4 "	" 6	29	5	40	3.00

RECORD'S NEW LEVER SEAL.

Some over a year ago we called attention to Record's new tight-seal cover pails which we offered for sale in various sizes, and listed in our 1896 catalog, page 24. The use of this principle has been extended to a great variety of sizes and kinds of tin packages. The latest application is in the form of a 2-inch lever seal shown in the cut, and applied to square cans of various sizes. This has several very decided advantages over the old-style screw cap, which it is intended to replace. It is much larger than even the 1½-inch screw cap, giving a larger opening through which to fill and empty. In many cases no funnel is necessary, and such large fruit as peaches and apples could be put up in these cans through the opening. It is more readily opened and closed than a screw cap. The wire lever by which the cap is pried out is always there and always effective, while with a screw cap it is often

necessary to apply a pair of large pincers or pipe-tongs to start the screw. The seal is low, occupying less room than most screws. It is also guaranteed to seal absolutely tight. There is a rubber gasket which forms the seal between the loose cap and the funnel part of the opening; and the cap, having four raised places around its rim, snaps firmly into place, and will stay till pried out by means of the lever. They have been thoroughly tested, and in rough handling the can will burst before the seal cap will be forced out.

We have a carload of cans in stock with this lever seal. The 5-gallon cans are put up one or two in a case, at the regular price—75c per box of 2 cans; 10 boxes, $6.50; 25 boxes at 60c; one in a box at 45c; 10 boxes, $4.00.

One-gallon square cans, 100 in a case, at $9.00 per 100. One box of ten 1-gal. cans, $1.20; 10 boxes, $11.

Half-gal. sq. cans, 100 in a box, $8.00 per 100; 12 in a box at $1.25; 10 boxes, $11.50.

One-quart sq. cans, 100 in a box at $6.50 per 100; 24 in a box at $1.85 per box; 10 boxes, $17.50.

Special prices on large quantities quoted on application. We are able to supply cans with this particular style of seal, from Medina only. They are specially adapted to the syrup trade, but are just as desirable for honey. Ohio sugar-makers' supplies furnished. Prices quoted to those interested.

CONVENTION NOTICES.

The Indiana Bee keepers' meeting will be held Jan. 7 and 8, 1897, in the Statehouse, at which time we expect and desire a full attendance of all bee-keepers of our State and those adjoining. Bring your wives, daughters, and sons, that they too may become interested in the practical management of bees for profit. E. S. POPE, Sec., Indianapolis.

KIND WORDS FROM OUR CUSTOMERS.

We are well satisfied with your supplies. We think the Weed foundation can't be beat.
Mt. Pleasant, Mich., Nov. 21. WALTER WING.

I am unusually pleased with Fred Anderson the bee-keeper, though he is in rather hard luck the last two chapters. R. P. JOHNSON
Smithville, Ga.

I have not received Sept. 1 GLEANINGS. Please send it to me. I am interested in Fred Anderson, so I can't miss one copy. MRS. D. ELLSWORTH.
Taylor, Ariz., Oct. 1.

I am well pleased with GLEANINGS as an "advertising medium," as I have received responses from 12 different States. N. L. STEVENS.
Venice, N. Y., Oct. 8.

I must say the money expended in advertisements in your paper has been the best investment I ever made. It has paid me over 150 per cent. You may make mention of it if you wish. DANIEL WURTH.
Falmouth, Ind., Oct. 12.

I like your paper very much, although I do not keep bees. I like it most of all for the points I get in gardening. I also like it for my young folks on account of its pure moral stories and sentiments generally; and, lastly, because it keeps out of politics. SHERMAN F. CURTIS.
Litchfield, Mich., Oct. 12.

Inclosed please find $1.00 for GLEANINGS. You see I don't want to stop the paper yet. It is full of interest from beginning to end. Don't send any premium, as I think I should send you one rather than you. Tell Mr. A. I. Root not to stop his Home talk. I like it very much, as it is full of Christian spirit. Will some of the Medina folks come to Montreal some time? I should be so glad to have a call at the college. H. DUPRET.
Montreal, Can., Oct. 31.

Wants and Exchange Department.

Notices will be inserted under this head at one-half our usual rate. Advertisements intended for this department must not exceed five lines, and you must SAY you want your adv't in this department, or we will not be responsible for errors. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. This department is intended only for bona-fide exchanges. Exchanges for cash or for price lists, or notices offering articles for sale, can not be inserted under this head. For such our regular rates of 20 c. a line will be charged and they will be put with the regular advertisements. We can not be responsible for dissatisfaction arising from these "swaps."

WANTED.—To exchange one Root's make section-machine (in fine order) for band-saw or offers.
THE GEO. RALL MFG. CO., Galesville, Wis.

WANTED.—To exchange all kinds of machinery (iron) for a saw-mill, and wood-working machinery. W. S. AMMON, Reading, Pa.

WANTED.—To exchange two fine St. Bernard dogs, St Bernard pups, shep. pups, pug pups, English bull pups; and any kind of a first-class dog you want I have. Write and tell me what you want and what you have to trade. W. S. BRILLHART,
Millwood, Knox Co., Ohio.

WANTED.—To exchange second-hand band instruments, bicycles, etc., for type-writer, comb honey, bee supplies. P. L. ANDERSON.
Miller, Nebr.

WANTED.—Canvasser to solicit orders for my permanent crayon portraits. Good wages assured. Write for particulars. W. A. BALDWIN,
Portrait Artist, Medina, Ohio.

WANTED.—To exchange 60-lb. cans in good order, at 25 cts. each, delivered, for comb or extracted honey at the market price.
B. WALKER, Evart, Mich.

INDEX TO

GLEANINGS IN BEE CULTURE,

FOR THE YEAR 1896.

Index to Illustrations.

Index to Editorial Items.

Index to Contributors.

LIST OF NAMES IN THIS NUMBER.

Baldridge M M, 835; Danzenbaker F, 892; Coles R F, 893; Fowls C. 893; Fox E, 889; Getaz A, 888; Greiner F 893; Gundrum A S, 893; Martin J H, 887; Smith T, 886; Steves M, 893, Whitcomb E, 892.